

# BUTANE-PROPANE *News*



No. 3

AUGUST 1939

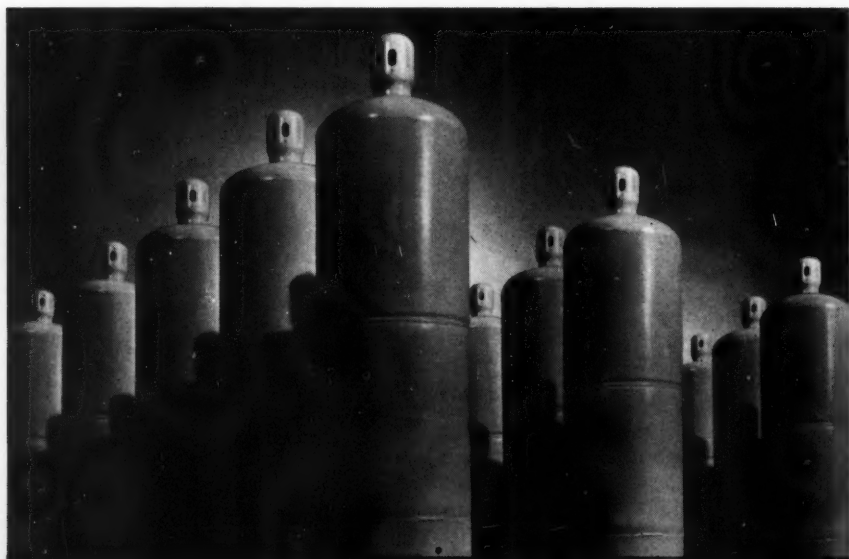
25c

## **IN THIS ISSUE**

RICE DRYING WITH BUTANE (Page 9)

TIPS ON HANDLING L. P. G. (Page 13)

PROPANE FOR CUTTING AND BRAZING (Page 19)



## EASE OF HANDLING IS A HACKNEY *Plus* VALUE

In every detail of construction Hackney cylinders are built for economy and service. Uniform capacity and the proper balance between maximum strength and minimum weight enable faster, surer, lower cost handling and storing.

The marked preference for Hackney cylinders is based on years of satisfactory performance and the absolute dependability of Pressed Steel Tank Company products. Complete understanding of the characteristics of gases, liquids and solids—combined with

ample facilities and the intimate knowledge of metals have produced a complete line of Hackney containers best fitted for each requirement.

Write, today, for complete information about the Hackney container which will meet your needs most economically and satisfactorily. If your requirements are unusual, Hackney engineers will help you design and develop a container to meet them exactly—there is no obligation.



### **PRESSED STEEL TANK COMPANY**

208 S. La Salle St., Rm. 1219, Chicago  
695 Roosevelt Building, Los Angeles

1399 Vanderbilt Concourse, New York  
1487 South 66th Street, Milwaukee

*Containers for Gases, Liquids and Solids*

# NO MATTER WHAT THE PROBLEM



Sales methods, marketing information, construction of plant facilities, are available to domestic suppliers who are customers of Shell.



Shell engineers are thoroughly experienced in all industrial heating application such as heat-treating and high temperature work. They are prepared to help you in design of new equipment, development of new processes.

Experience in every use is at your command when you specify Shell Liquefied Petroleum Gas \_\_\_\_\_

**T**HROUGH years of experience, Shell has accumulated a wide variety of information on the uses of liquefied petroleum gas.

The breadth of this experience assures you of competent advice on such diversified subjects as equipment design, application methods, storage and handling methods, construction of facilities, and marketing information for domestic suppliers.

The length of this experience assures you of the soundness of the service offered you by the Shell engineering staff.

Shell's experience, Shell's technical service are as near to you as your phone. Simply call the nearest Shell office.

Shell engineers have helped develop processes for the use of liquefied petroleum gas in such widely varied services as gas enrichment, internal-combustion engine fuel, hotel kitchen and dining car fuel, etc.



## SHELL LIQUEFIED PETROLEUM GAS

Offices of SHELL OIL COMPANY, INCORPORATED • ST. LOUIS • SAN FRANCISCO • NEW YORK  
INDIANAPOLIS • CHICAGO • MINNEAPOLIS • JACKSONVILLE • DETROIT • NEW ORLEANS • CLEVELAND

BUTANE-PROPANE News

# BUTANE-PROPANE *News*

AUGUST  
1939

## Contents for August, 1939

LETTERS . . . . .	4
MAINLY BEYOND THE MAINS . . . . .	7
RICE DRYING . . . . . <i>By P. F. Murphy</i>	9
"A STITCH IN TIME" . . . . .	13
TORCH FUEL . . . . .	19
PEOPLE . . . . .	24
LARGE CONSTRUCTION FIRM IS CONVERTING ROAD EQUIPMENT FOR USE WITH BUTANE . . . . .	27
INDUSTRIAL PURCHASES OF L. P. G. ADVANCE 250% IN CALIFORNIA IN 1938	28
NEBRASKA MEAT PACKING PLANTS REDUCE FUEL COSTS ONE-THIRD WITH BUTANE . . . . .	32
SCHOOL PIPING SPECIFICATIONS . . . . .	39
SELLING . . . . .	40
"THE FAIR'S THE THING," SAYS TEXAS DEALER; EXHIBIT PSYCHOLOGY WINS FRIENDS, SALES . . . . . <i>By Craig Espy</i>	44
NOTES . . . . .	50
LIQUEFIED PETROLEUM GAS LOWERS FUEL COSTS BY 25 PER CENT ON IRRIGATION PUMP JOB . . . . . <i>By W. N. McMillen</i>	52
PRODUCTS . . . . .	58
RESEARCH . . . . .	62
ADVERTISERS . . . . .	71

**Publication Office:** LOS ANGELES, 810 South Spring Street, Michigan 1481. **Branches:**  
NEW YORK, 489 Fifth Avenue, MUrray Hill 2-2492; DALLAS, 6015 Morningside Avenue,  
Phone 8-6309; CHICAGO, 1064 Peoples Gas Building, HArrison 6634.

August, 1939, Volume 1, Number 3. BUTANE-PROPANE News is published monthly, copyright 1939 by Western Business Papers, Inc., at 810 South Spring Street, Los Angeles, Calif. **JAY JENKINS**, President and General Manager; **CRAIG ESPY**, Vice-President; **GEORGE H. FINLEY**, Vice-President; **JAMES E. JENKINS**, Secretary-Treasurer; **WILLIAM C. COPP**, Eastern Manager; **ARTHUR ROHMAN**, Managing Editor; **LYNN C. DENNY**, Assistant Editor; **L. J. C. SPRUANCE**, Pacific Coast Advertising Manager. Subscription price, United States, Canada, Mexico, and Central American countries (in advance), 25 cents the copy, one year for \$1.50, three years for \$2.50; all other countries, \$3.00 per year. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 3, 1879.

**PUBLISHERS:** GAS, The National Gas Magazine; OIL & GAS Equipment Review; HANDBOOK BUTANE-PROPANE GASES (two editions).





## SIGN OF PROGRESS

"Centerville's" Main Street may be torn up and closed to traffic but her citizens aren't grumbling about the temporary inconvenience. Instead, they welcome it, for that "Street Closed" sign, in reality, is a sign of Progress!

It means *Butane is coming to town!*

Rural communities the country over, far removed from natural or artificial gas supply sources, through privately and municipally-owned systems are piping Butane into homes and stores as the modern answer to their fuel needs. And citizens in these communities are benefiting in so many ways.

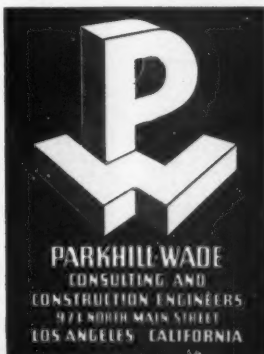
Take the housewife. Now she turns a tap and gets instant hot water from her automatic water heater. Her gleaming white kitchen range is her pride and joy. And as to that glistening white ice box over in the corner, she still can't figure out how

you can make ice with heat, but she's happy because it does. When wintry winds sweep through the town, efficient space heaters bring glowing warmth and comfort to all her family.

And as to business; did it benefit from Butane? Men got jobs when the mains were laid. Merchants developed a profitable appliance business. Salesmen are earning sub-

stantial commissions and all the way around, Saturday's market baskets are just a bit fuller with the good things of life because *Butane came to town!*

Perhaps you are thinking about bringing Butane to your town. In that case we'd like an opportunity to place our experience at your disposal, for we have developed a wealth of data and facts from designing and installing community-wide Butane systems. We will be more than glad to co-operate.



**BUTANE PRODUCTION UNITS ★ STANDBY PLANTS  
STORAGE UNITS ★ DISPENSING EQUIPMENT**

# LETTERS

Gentlemen:

As I read Vol. 1, No. 1 of BUTANE-PROPANE News, I was strongly impressed with the fact that here at last is a publication for the liquefied petroleum interests which certainly is to fill a real need. However, I withheld my comments to see what the subsequent issues might bring, but as I have just completed reviewing the July issue, I can contain myself no longer. My hearty congratulations to you on a publication which is destined to become a vital factor in the development and progress of the liquefied petroleum gas business.

DOLPH JANSEN, JR.

Sales Promotion Manager — Rural  
Serval, Inc.  
Evansville, Indiana

*BUTANE-PROPANE News is happy to receive a favorable expression of a reserved judgment. — Ed.*

Gentlemen:

We are enclosing rough layout of our advertisement which is to appear in the August issue of BUTANE-PROPANE News.

As a byword, we might mention the fact that we have received several interesting inquiries directly traceable to our first advertisement.

ROBERT J. WARREN

Lancaster Iron Works, Inc.  
Lancaster, Pennsylvania

Gentlemen:

Aside from the desire to have a number of our distributors receive the June issue from its general appeal, we would like to have had them have the data on the A.B.C. of L.P.G. as given in that issue.

If you would care to send us 25 copies of the July issue, we will be glad to see that they are distributed with a bulletin suggesting that the distributors involved subscribe.

R. E. THOMAS

EverHot Heater Company  
Detroit, Michigan

*Copies sent. — Ed.*

Gentlemen:

We were very much surprised at the photographs illustrating the article on page 27 wherein our tractors are referred to as Caterpillars. Undoubtedly the author does not know that the name Caterpillar refers to a specific tractor manufactured by the Caterpillar Tractor Company and is not a general term applied to a tractor with a crawler tread. Tractors of this type are referred to as crawler tractors or track-type tractors, together with the name of the manufacturer. Our tractors are known as Allis-Chalmers crawler tractors and

others are manufactured by the International Harvester Company and the Cleveland Tractor Company.

E. ABRAMSON

Sales Promotion Department  
Tractor Division  
Allis-Chalmers Manufacturing Company  
Milwaukee, Wisconsin

*No more shall we confuse the respective tractors of Caterpillar Tractor Co. and Allis-Chalmers Manufacturing Co. — Ed.*

Gentlemen:

We would appreciate it very much if you would advise us the names of the various manufacturers making equipment for butane underground equipment.

FRED BLACK

Manager  
Essotane Gas Company  
Anderson, South Carolina

*The foremost manufacturers of such equipment are easily found in the advertising pages of BUTANE-PROPANE News. — Ed.*

Gentlemen:

The writer subscribed to your publication before the first issues came out and now that I have seen the first two issues, I have no hesitancy in stating that the magazine fills a long-awaited need and at the rate of your improvement, I am sure that it will become a magazine of utmost importance.

A. H. MENUET

Manager Service Department  
Skelgas Company  
Kansas City, Missouri

Gentlemen:

Enclosed please find list of bonafide prospects whom we wish you to mail copies of BUTANE-PROPANE News — July issue if possible.

We will be glad to purchase fifty of this issue and take care of mailing expense ourselves and in some instances we will personally place them where they will do the most good.

Yours for more BUTANE-PROPANE News.

JOHN X. WILLIAMSON.

Acme Electric Welded Steel Products Company  
El Paso, Texas

*Thanks for the 50-copy order. — Ed.*

Gentlemen:

It is easy to appreciate the sincerity of the testimonial letters given in your July number when one feels the same way. Best wishes.

Certainly you have made an excellent start, with a lively tone; one that suggests a sound future of service to a live industry, L.P.G.

A. H. GROVE

P.S.: Send advertising rates.

Alva Manufacturing Company  
San Francisco, California

*P.S.: Right away. — Ed.*

Telegram:

WE WOULD LIKE YOUR PERMISSION TO REPRODUCE ARTICLE JUNE ISSUE ENTITLED QUOTE THE A B C OF L P G END QUOTE FOR REMAILING TO OUR FIELD ORGANIZATION. WILL INCLUDE CREDIT LINE AND DATA YOUR PUBLICATION.

DOLPH JANSEN

Servel, Inc.  
Evansville, Indiana

*Permission granted. — Ed.*

Gentlemen:

We have today received your statement in the name of the writer and beg to advise that we have received the first two copies of your issue and wish to avail ourselves of this opportunity of congratulating you on the very good way it is presented, especially on the size, as it is handy for slipping into the pocket and always being available to read at any spare moment.

C. R. HOJEL

Jefe del Departamento  
Distribuidora de Petroleos Mexicanos  
Departamento de Gas  
Mexico, D. F.

Gentlemen:

In the June issue of the BUTANE-PROPANE *News* you carried an article entitled "The A.B.C. of L.P.G."

In this you covered the fundamentals of liquefied petroleum gas in a very complete, plain language manner. We are, at the present time, starting to publish a new catalog covering our line of Liquefied Petroleum Gas Regulators, and allied equipment, and it occurred to us that a reprint of your article in the forepart of our catalog, or at least some of the extracts from it, might be appreciated by many of our customers who are new in the industry or are inadequately informed regarding liquefied petroleum gases. Therefore, we would like to have permission from you to reprint all or parts of the article, giving you due credit, of course, in this new catalog.

KENNETH R. D. WOLFE

Fisher Governor Company  
Marshalltown, Iowa

*Permission is again granted. — Ed.*

Gentlemen:

We are in receipt of your July issue of BUTANE-PROPANE *News* and feel this publication supplies a long-felt want from the standpoint of informing our salesmen of what is going on in the field.

We would appreciate it if you would arrange to see that we receive fifteen copies of your next issue.

H. R. RUTTER

Assistant Sales Manager  
Round Oak Company  
Dowagiac, Michigan

Gentlemen:

We have just received the second issue of BUTANE-PROPANE *News*, and are even more pleased with this number than we were with the first issue.

We note on page 72 an article entitled "Butane Fuel Is Used to Heat Metal for Linotype Machine." And, we are forwarding you a clipping taken from the Pineville Democrat, of Pineville, Missouri, which we believe will be of interest to you. This is our first installation of this type but it is highly satisfactory.

Note: This is the printing shop which was shown in the Jesse James picture which was filmed in Pineville, Missouri, last year.

T. T. BURGESS

Manager  
Arkansas Butane Company  
North Little Rock, Arkansas

*We are interested. Will you send us a photograph of the installation.?*—Ed.

Gentlemen:

We received your copy of the BUTANE-PROPANE *News*, and at this time I would like to say that it was thoroughly enjoyed by us. We got a great deal of good information from this book and wish you continued success in the publishing of same.

We are very much interested in the map that you have in your July issue, and we would appreciate it very much if you would send us a few copies so that we will be able to supply them to the trucking firms in our county.

Wishing you success, we remain

E. H. GROGAN, JR.

Sales Manager  
Jackson Bros.  
Stockton, California

*For the maps, please address Mr. Gilbert Woodill, Ensign Carburetor Co., Los Angeles, California.*—Ed.

Gentlemen:

I have noted and read with interest your article on turkey-raising on page 67 of your July issue of BUTANE-PROPANE *News*. I wish you would advise me where I may secure installation information and butane brooder equipment for use in my territory.

We raise a lot of chickens in this section of Georgia and I believe that through this outlet we can increase our butane sales considerably.

Thanking you, I am

C. G. HANGABOOK

Economy Gas & Appliance Company, Inc.  
Montezuma, Georgia

*BUTANE-PROPANE News makes a plea to its readers. We earnestly hope that someone will send Mr. Hangabook the information he desires.*—Ed.

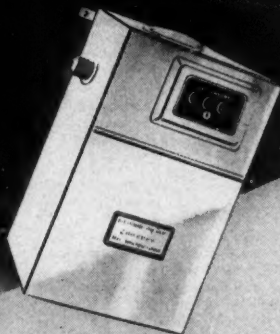
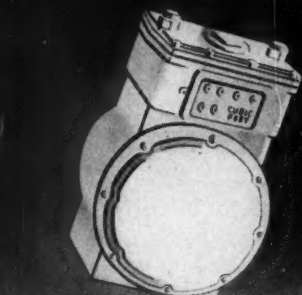
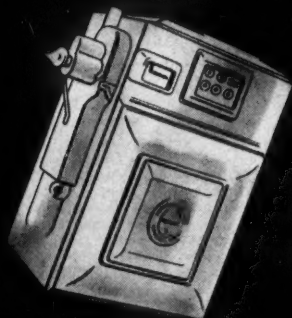
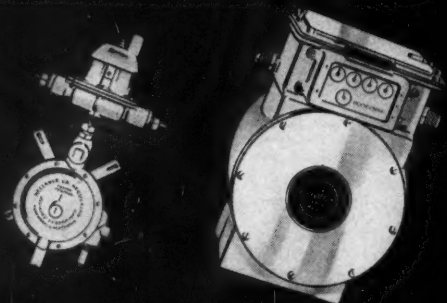
Gentlemen:

Permit us to congratulate you on the type magazine you are getting out covering the bottled gas industry, and we wish you every success. It is believed that every dealer and distributor will benefit by subscribing to your magazine.

W. C. JENKINS

Natural Gas Service Company, Inc.  
Concord, New Hampshire

# A SERVICE COMPLETE



Requirements differ for the various liqu-  
fied petroleum gases. A complete line of  
"American" meters, special indexes and  
regulators has been developed to satisfy  
every conceivable operating condition.

GENERAL OFFICES - 40 EAST 42ND STREET, NEW YORK, N. Y.

**AMERICAN**  
**METER COMPANY**  
INCORPORATED (ESTABLISHED 1894)

# MAINLY BEYOND THE MAINS

---

## The Importance of Being Earnest

It is not our intention to be a carping critic in these columns, and such remarks as we have made so far on the greater need for safety in installations and operating practice, better business methods and the consequent evils of price wars, have not been made in a nagging spirit, but in the sincere hope that they might lead some of the erring brethren to see the light. And in the interests of better business, too, for everybody. There are a few simple rules to follow:

1. Never start a price war. Let the other fellow have it on his conscience.
2. If, after the other fellow has gone haywire, you feel you have to meet his competition
  - a. Be plenty sure of your facts. The matter is serious enough to warrant your personal attention. Don't take anybody's word for it.
  - b. Weigh the consequences from every angle. Price is not the only factor by any means. Can you offset cut-price competition with better service?
  - c. Keep cool. Snap judgments snap more bank balances than anything else in business.
  - d. Consult your dealer before taking any action.

Hence, the importance of being earnest. Bad decisions made either in ignorance or in anger today are the bad headaches of tomorrow.

## Licensed Installations

An industry can only go so far to correct abuses within itself. The more successful it is in this respect, the less vulnerable it becomes to governmental regulation, and accordingly the greater control it has over its own destiny.

It is logical to assume that the California State Accident Commission, for example, feels that it has good and sufficient reasons for trying to put through legislation calling for the licensing of all engaged in the installation of liquefied petroleum gas equipment. They probably feel that irresponsible and inexperienced installers are a public menace—as they are. Examining them and granting them licenses would be a considerable step forward in ensuring that only experienced and qualified men do the job.

Nobody can argue against competent work. The pity is that such legislation should be necessary.



## Appliance Prices

Gas appliances sales are a means to an end. To use our gas, our customers must have the necessary appliances. We are the logical people to sell them. Unfortunately, there are some of us who have had a limited experience in so-called specialty merchandising. And others have had little experience in selling utility service. Some of us are *tyros* in both phases of the industry, and there is apt to be some confusion of thought in reconciling these two distinct selling efforts. The one is the sale of a specialty appliance designed to use our service, and the other is selling a utility service, the real source of our profits and contingent on our ability to satisfy and keep our customers satisfied.

The elder J. P. Morgan, who was no slouch in his own right at dollar duplication, once said: "No man ever went broke taking a profit." Simple, but . . . Our difficulty lies in where we shall take our profit. Some feel a loss on the appliance sale is justified, if it induces an otherwise reluctant "suspect" to use our gas service. Others, on the other hand, agree to sell gas at impossibly low prices in order to sell gas ranges, refrigerators and water heaters at fat and fancy profits. Nobody in his senses, with any intention of staying in this business, would even consider the latter. It is a typical fly-by-night trick, and ought to be immediately exposed as such. But should we sacrifice our appliance profits entirely to sell gas?

BUTANE-PROPANE *News* answers its own question with an emphatic "No." The appliance sales profit has a definite place in our industry's economics. It is a legitimate profit, and one we would insist on taking were we divorced entirely from the gas service industry. Furthermore, the gross profit on the appliance sale is needed to finance the new business development of the industry. It costs plenty of money to develop this business, and if it doesn't come partially or in full from the appliance sales, it has to be loaded on the gas service itself. The fact that our piped gas colleagues for years have never hesitated to insist on a gross appliance sales profit to lighten their new business expenditures, ought to encourage us to do likewise.

Some companies use a 100 per cent mark-up on appliances, with a connection charge also buried in the retail price. Others use lesser mark-ups, but few of the soundly operated companies get below 70 per cent. When you consider freight, stores, repairs and servicing expense, salesman's compensation, advertising and other miscellaneous sales costs, it is doubtful if even at 75 per cent we have more than a break-even margin.

We believe in an adequate appliance mark-up, because without impairing the volume of sales of a real merchandiser, it takes the load off the gas service cost, in which, in the last analysis, the real profits of this business belong.



# Rice Drying

## The Use of Butane Has Revolutionized Methods and Costs in California Fields

**I**N 1935 The Ransome Co. did considerable experimentation in search of new markets for the distribution of butane gas, as we realized that to establish this new industry on a solid and respected foundation an attempt should be made to develop its own use and markets in such a manner as to injure least the established markets of other products.

As a result, many new potential outlets were found in the agricultural industry, of which the drying of rice seemed most inviting. The period of germination, growing and drying is lengthy; harvest comes in the late fall. The old method consisted of cutting, bundling and shocking, then leaving the crop in the field until nature dried the rice on the stalks. Stationary harvesters were then placed in the field on broad wheels or sleds, and the rice carried to them for threshing and sacking.

The rice, in sacks, was then transported to central warehouses where very often it was unsacked and elevated into bins for further tempering and drying before it was delivered to the mills for polishing. It was not unusual to carry on the threshing intermittently through the entire winter months, due to wet weather. If the winter was severe, with no dry spells, 75 per cent crop loss was not unusual.

Butane made it possible to build

**By P. F. MURPHY**

Sacramento, Calif., District Manager,  
Ransome Company

driers that revolutionized the entire method. Now, when the crop reaches maturity, the farmer uses either a self-propelled or towed combine harvester with a bulk bin attachment. This unit cuts the rice high on the stalks, threshes and stores it in the bin. Special dump body trucks are driven alongside where the rice grain is loaded in transit and the bulk rice is then transported to central drying plants where large volumes of air heated by direct butane combustion proceed to extract excess moisture and improve the quality in general for milling.

This process depends upon the facts that the temperature can be exactly controlled, the products of butane combustion have no sooting (or, in general, non-toxic) effect, and furthermore impart no unpleasant taste to the rice after milling. The rice grain is particularly susceptible to the latter.

The following facts, because of this new method, have made it possible for the farmer to produce rice at not to exceed 60 cents per hundred as against an average cost of \$2 per hundred by the old method:

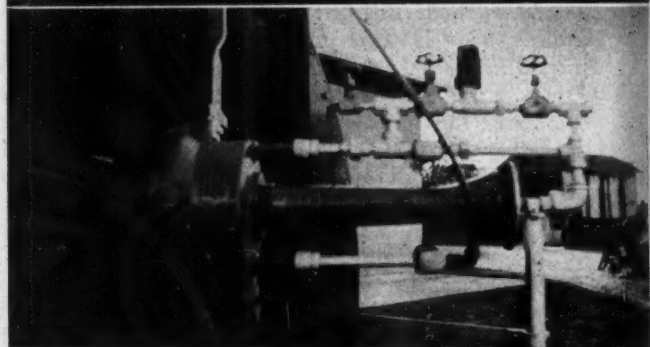
1. *Less labor and equipment.* Man power; small field tractors, or horses



**Commercial drier under construction in connection with warehouse of J. C. Hornall, Arbuckle, Calif., showing columns, fan and butane storage tank. (Commercial.)**



**Burner arrangement operating on low fire mounted on opposite to driven side of fan. E. L. Adams ranch, in Butte county, Calif. (Large and small grower installation.)**



**Liquid burner mounted on driven side of dual fan. J. C. Hornall ranch. (Commercial.)**

**Burner arrangement mounted on driven side of dual air intake fan. E. L. Adams ranch. (Large and small grower.)**




---

**Installations by Ransome Co., Emeryville, Calif., and H. M. Shanzer Co., San Francisco.**

and wagons; elimination of sacks, tools, string, etc.

2. *Insurance against weather.* Rice may be threshed on reaching maturity and transported to drier in one operation; growth can be forced, as heavy stalks are not necessary to resist wind and rain.

3. *Heavier yield and better quality.* By planting heavier yielding species of grain with ample time for maturity before harvest; eliminating field loss after cutting or in handling before threshing; driers have bleaching effect and eliminate sun check.

4. *Larger borrowing power on crop at lower insurance rates.* Crops can be sold on early market or held for late market without fear of spoilage.

The three types of drier owners:

1. Growers farming 2500 acres per season who have their own driers.

2. Small growers who use the same method as the larger growers but must depend on drying their neighboring small growers' crops to help amortize the cost of the drier.

3. Commercial driers. This type is the strictly commercial drier which usually operates in connection with an established warehouse company. The latter type cannot give the grower the cheap harvest cost of the others, as the crops must be sacked in the field.

Rice grain is transferred from the field unloading bunker through auger type conveyor to primary elevator pit, then elevated to shaker type separator where straw culls, etc., are removed. The clean grain is then distributed by gravity into drier screen type columns where volumes of heated air are passed from an inner chamber outward through the grain. The gravity flow of the grain is controlled at the base of

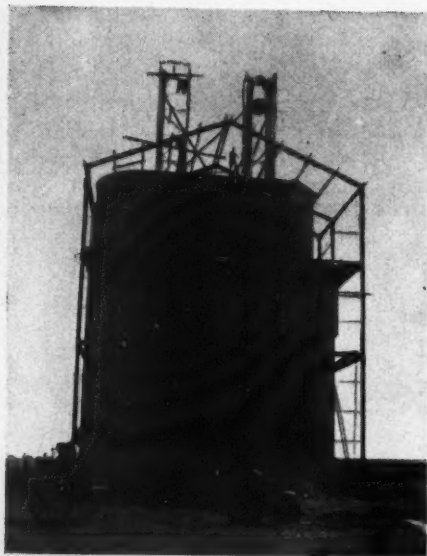
the columns by a motor-driven, adjustable rotator with variable speeds.

The grain is then conveyed to a secondary elevator pit and elevated to storage bins for tempering. If desired, the grain can be conveyed from the storage bins back to the primary elevator for further drying, or conveyed to cars for shipment, by means of a reversible conveyor located at the base of the bins.

The hot air is furnished by a rotary type fan powered by a butane internal combustion engine or an electric motor. Automatic controlled burners are located at the fan intake with the flame entrained directly into the in-going air stream of the fan. The fan blows the heated air through a shaft where it is distributed upward through screened drier columns and dissipated through the columns of grain to the atmosphere.

Liquid butane is piped underground from a suitable storage tank under its own pressure through safety controls to a heat exchanger, where the liquid is gasified. The gas is then supplied to a venturi torch type spread head burner for combustion. There are two methods of vaporizing the butane before the air-mix and combustion. One is by heat exchanging the butane through special designed burners, which consists of a spread head, jacketed by a vaporizer, a venturi, pilot, necessary valves and fittings. Liquid is introduced into the bottom of the jacket, where it is vaporized by the conducted heat of the burner head. It is then conducted through requisite valves or controls to an orifice in the throat of the venturi where the air for combustion is inspired. (Drawing, p. 12.)

The other is by gasification through



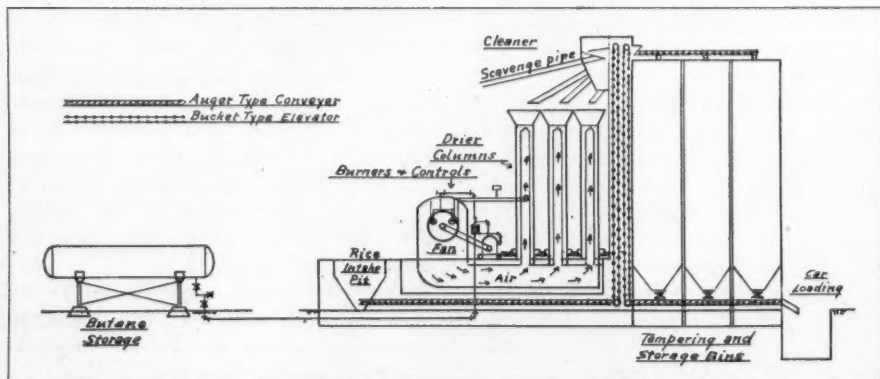
Complete large growers' drier under construction on E. L. Adams ranch, Butte county, Calif. Installation by Joe Gollbach of Trowbridge, Calif., and Ransome Co.

a stage of pressure reduction and coils immersed in hot water, the hot water for latent heat being supplied from the

cooling system of an internal combustion engine. The latter is most desirable where the butane-fuel internal combustion engine is used to propel the fan, not only from an economical standpoint, but by allowing the fan to be operated at variable speeds.

The burners are governed for maximum heat output by electrical controls, a pyrometer being located in the air stream of the drier column which operates magnetic valves on the burners through a relay. The minimum heat or low flame is controlled manually. Constant temperatures are controlled within one degree. Average temperatures for drying rice grain are held constant from 80 degrees F. to 110 degrees F., depending on moisture to be extracted, species of grain, etc.

A fan capable of putting out 60,000 cu. ft. of air per minute at 450 r.p.m. is commonly used in a three to four column drier. This size drier has a capacity of from 175 to 300 bags (100 lbs.) per hour. Average fuel cost at present price of butane is from \$.0075 to \$.01 per bag (100 lbs.).



Typical rice drier. Ransome Co., Emeryville, Calif.

# "A Stitch in Time"

## Important Safe-Handling Practices for L. P. G. Field Engineers to Memorize

**T**HE subject, "butane," is of special interest to safety engineers as its use is definitely tied into methods of safe handling to make it a practical, usable commodity. It is a hazardous product when carelessly handled and a useful and necessary material of great commercial value when proper precautions are taken in design of apparatus and handling methods. The safety engineer should be acquainted with both the hazards and the utility, as use of this commodity is increasing rapidly.

The subject will be covered briefly as to origin and uses and methods of handling. For convenience sake the term, "butane," will be applied to all liquefied petroleum gases or their blends.

We are all familiar with gasoline and natural gas. When oil is produced from a well, wet gas is usually associated with it. This gas is treated in an absorption plant and casing head gasoline is removed. The other main product is dry gas that is piped to the cities for domestic and industrial use. In between natural gas and gasoline is a series of hydro-carbons that are too light to go into gasoline and too heavy to go into natural gas.

These are propane, iso-butane, and normal butane and are the components of liquefied petroleum gas. By nature they are gases at ordinary atmospheric

pressures and temperatures. Their physical characteristics are such that they can be easily liquefied by pressure or cooling, and they can be handled commercially in the liquid form and used in the gaseous state.

The following physical characteristics are interesting.

	Propane	Iso-butane	Normal Butane
Boiling point at atmospheric pressure	-44°F	+13°F	+32°F
Vapor pressure at 100°F (lbs. sq. in. gage)	172	59	37.5

Commercial butane will vary from a product containing no propane to one with a propane content as high as 60 per cent.

To visualize the physical characteristics of this product let us compare it with water.

If a pressure tank is partly filled with water and heated with an outside burner the temperature rises till it reaches 212° F. At that temperature the liquid water starts to vaporize into steam. As the temperature is increased the pressure increases and water is a safe material to handle under pressure as long as the design of the boiler and fittings is adequate for the pressures to be generated. Proper safety valves are installed to relieve excess pressures that are liable to be gener-



ated, due to the usual human factor.

Carry this example to butane. If a pressure tank is partly filled with butane and heated, the liquid will start to vaporize at 32° F. Due to the low temperature of vaporization outside flame is not necessary, the heat from the atmosphere being sufficient to cause the boiling. If additional heat is applied either from a flame or the sun's rays, the temperature can be raised further. As this temperature increases, the pressure increases. At 100° F. a pressure of 37.5 lbs. per sq. in. will be generated. If a mixture of the lighter materials is used, and this is the usual case in commercial mixtures, the pressure at 100° F. will be approximately 90 to 120 lbs. per sq. in. As with steam, if the storage container and piping are designed to handle safely these pressures and adequate relief area is allowed for relief of excessive pressure due to unknown outside exposures, the installations are comparable.

If a sample of butane contained in a small tank is allowed to escape through a valve in the vapor space in the tank, only vapors will emit. If these vapors are lighted, they will burn similarly to an ordinary gas flame. If part of the contents are allowed to escape through a valve in the liquid space, it will emit in the form of liquid. The liquid immediately proceeds to vaporize taking heat from the atmosphere or the ground to supply the latent heat of evaporation. As a consequence the temperature is greatly reduced causing the formation of frost when the liquid hits. If this stream is ignited, it will burn in a manner similar to a stream of gasoline. A delayed ignition of the liquid is usually accompanied with a flash of the vapor-

ized gas that has been generated. If in the open, this presents little greater hazard than a gasoline flash, but if confined in a room or other location where a possible perfect air-gas mix may result, the possibility of explosion is greater than with gasoline.

So much for the characteristics of the product.

The uses to which this product are being put in order of their importance are (1) domestic fuel, (2) motor fuel, (3) industrial fuel, (4) base products for chemical industry, and (5) standby fuel for natural gas.

In small communities where natural gas is not available, it is the source of supply of gas for fuel for domestic and commercial use. The product is stored in pressure containers, vaporized at a central plant and piped through the town as a gas, and served through meters to the consumer, the same as gas service in the larger cities.

In still more isolated farms and ranches, the fuel is shipped in small tanks and the vapors are drawn off the tank, reduced in pressure by a regulator, and burned in standard domestic gas appliances. Heat from the atmosphere is used for vaporization.

As a motor fuel it is stored in the vehicle in pressure containers in the liquid form. By means of a small vaporizer operating from the jacket water of the engine it is converted into gas. The pressure is reduced to about 6 lbs. per sq. in. in a primary regulator and the final feed to the engine through the carburetor is controlled by a regulator actuated by the engine manifold pressure. Unless there is a vacuum in the engine manifold, the regulator is closed, shutting off the fuel supply to the engine. No manual



operation then becomes necessary.

As a fuel it has advantages over gasoline in its high octane rating (100+), a narrow boiling range, and a dry gas fuel.

As an industrial fuel it is used for heat treating, as a cutting gas, preheating for welding, carbonizing and other uses requiring high temperature flame with unvarying B.t.u. content.

A stand-by for natural gas is a new and fast growing use. As most natural gas supplies are piped to the larger consuming centers, it is natural to expect shortages of supply during peak consumption periods. Since the utility is required to continue service to the high price bracket consumers without interruption, some large users are compelled to shut off during these periods. The butane stand-by plant provides a source of supply of fuel during these periods.

We have butane to handle. What has been done to insure its safe handling?

In 1934 the California Industrial Accident Commission, after public hearings at San Francisco and Los Angeles, adopted the Liquefied Petroleum Gases Safety Orders, and these regulations are the guide for safe handling of butane in the State of California. Many other states also have special legislation and codes.

Essentially they cover the requirements for design of pressure vessels to handle this commodity, safety valve requirements, location, method of installation, piping and valve requirements, methods of testing and limits of filling of tanks. These orders are available in pamphlet form from the Industrial Accident Commission.

The National Board of Fire Under-

writers' Pamphlet No. 58, parts 1 and 2, 1939 edition, are now available, which are the result of the combined efforts of the fire protection and manufacturing and distributing units of the industry to promulgate safe practice.

Aside from these printed regulations, there are points the safety engineer should be acquainted with. Some of the more important ones are as follows:

*1. Detection of Leaks:* A well-designed installation will normally show no leakage. However, to err is human. Butane should be odorized. Generally this is so, but occasionally there is a manufacturer who does not use an odorant. If odorized, a leak is readily detected by the odor, the same as experienced with natural gas. If there is no artificial odorant, a leak can be detected by a slight petroleum odor. If there is a leak in the liquid lines, it can be noticed by frost forming at the leak if it is a bad one, or a drop in temperature in the valve or fitting if the leak is a small one. Do not search for leaks with an open flame.

*2. Repairs to Tanks or Lines:* Before attempting to repair or tighten up a leak, it is best to shut the pressure off the system by closing the valves and draining the lines. If the leak is in a tank, the tank should be blown down before working on it. This caution is given, as a leak is usually due to poor workmanship or materials. There is always the hazard of breaking a nipple or fitting in the process of tightening up, and if this happens with full pressure in the system, a potential hazard is introduced that is usually not worth the saving in time from the use of the short cut.

*3. Working in Closed Quarters:* Port-

able tanks or truck fuel tanks or fuel piping on trucks should be worked on out-of-doors in an open space where vapors will not collect and can be dissipated by the air circulation. The very few severe accidents that have occurred in California have been due to carelessness of working on tanks in garages or shops where an accumulation of gas has been possible and ignition has occurred from nearby flames.

**4. Inflammability:** The limits of explosive mixture are between 3 per cent and 9 per cent of gas to air. In other words, if there is less than 3 per cent or more than 9 per cent of gas in an air mixture, it is not explosive. It is, however, combustible on the outer edges of the mixture. A spark can be set off in a tank of butane vapor and there will be no ignition due to lack of oxygen present. The rate of flame propagation is a little less than 3 ft. per second, which is about 2 miles per hr. Both the limits of explosion mixture and rate of flame travel are very close to the same characteristics of gasoline.

**5. Specific Gravity:** The specific gravity of butane vapors is approximately two with air equal to one. This physical property varies from natural gas where the specific gravity is .6. Butane vapor is heavier than air and tends to settle to the ground instead of rising and mixing with the atmosphere. As a result care should be taken in the location of appliances to provide for bottom ventilation in rooms or buildings to prevent accidental accumulation of vapors.

**6. Butane Fires:** If a tank containing butane becomes ignited from any cause, stop and think before putting it out. If it is possible to reach a valve between the tank and the fire, shut it and

the fire is out. If the fire is burning from any of the vapor connections on the tank and a valve cannot be reached, let it burn. Gradually the pressure in the tank will become lower. When the pressure drops to a point that the flame has no force it can be snuffed out with a wet sack and the opening capped. If a liquid connection is burning, it will continue till the tank is empty. If it is impossible to reach the valve to shut it off, this fire can be put out with a CO<sub>2</sub> extinguisher. Unless a valve can be reached after the fire is put out to turn off the liquid, it is well to allow it to burn, confining the fire to its source.

**7. Tank Explosions:** Butane in a tank is not explosive. To have a tank explosion it is necessary to have a correct mixture of oxygen with the butane. This condition is normally not encountered unless an empty tank is left in the atmosphere with open valves. It is then possible for air to mix with the vapors in the tank, causing an explosive mixture similar to that found in empty gasoline drums.

**8. Tank Bursting:** Butane will expand when heated, causing an increase in volume. An overfilled tank of proper design will relieve the excess pressure through the safety valve. Most tank failures have been due to lack of safety valves or poor construction.

**9. Outside Exposure:** The most common experience in butane fires is outside exposure. Examples of this are fires on cargo trucks, skid tanks, and small tanks that are caused by burning buildings or any other outside exposure. All of these types of containers are protected with safety valves or fusible plugs, or both. There is practically no chance of explosion. It is well to stand clear of these outlets, as

when they let loose under pressure a stream of gas will escape with considerable noise and velocity and on igniting will burn like a large torch.

**10. Care in Handling Liquid Butane:**

Caution should be taken in handling liquid butane. Do not try to repair or change a liquid valve without emptying the tank. The boiling point of the liquid is so low that it is impossible to work in a flowing stream, as it will freeze the hands even if gloves are worn.

**11. Welding:** Before any welding is done on a tank that has contained butane it should be steamed out thoroughly the same as a gasoline tank.

**12. Hoses for Transferring Butane:** Hoses used for transferring butane from one container to another should be made of special material to resist the solvent action, and designed for high-pressure service. Special hose couplings should be used. These materials are available on the market.

**13. Transportation:** Butane is transported in small cylinders, tank trucks, tank cars, and skid tanks. For rail shipment the cylinders must conform to I.C.C. specifications. For intra-state truck shipment containers approved by the Industrial Accident Commission are acceptable.

Tank cars are of special design and are used for no other purpose. These cars come under the jurisdiction of the I.C.C.

Tank trucks and trailers are used extensively. This equipment is inspected by the representative of the Industrial Accident Commission and by the local fire department. An inspection tag is issued and carried in the truck. No supplier of butane is legally al-

lowed to fill a butane tank truck unless it carries an inspection tag. These cards are reviewed every two years unless the vehicle has been in a fire or bad accident, whereupon it is necessary for inspection before it is returned to service.

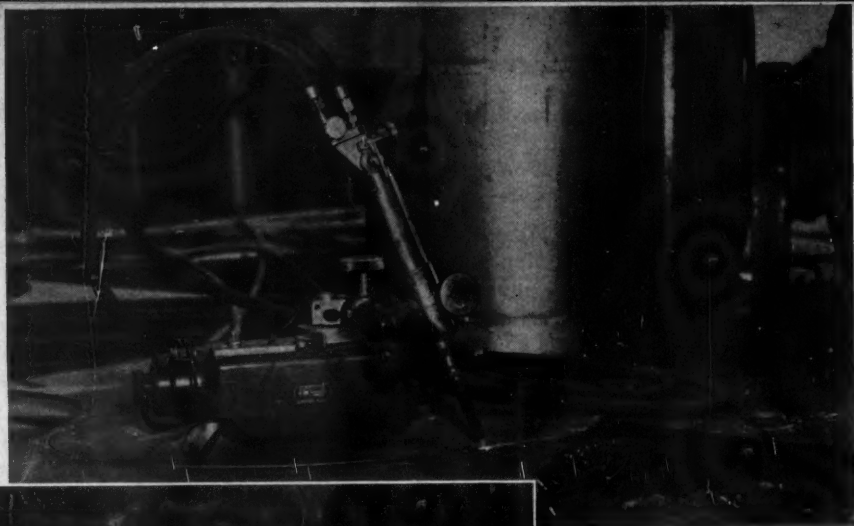
All valves and openings should be guarded thoroughly to prevent them being broken off in case of collision or turn-over.

All inflammable liquids and gases are hazardous to handle. Gasoline is the one most common in every-day life and is used so universally that little or no attention is paid to it. It has been reduced from a hazardous commodity to a tame one by the vigilance of the various fire departments and the restrictions placed on its handling. It has been regulated till it is nearly fool-proof, but occasionally there is a gasoline fire.

Butane is in much the same category. State regulations and a desire on the part of those interested in the expansion of its use to see that it is handled safely has brought it into the fairly tame class.

Of the many millions of gallons handled and used during the last five years, there are very few incidents to mar its record as an important, usable commercial fuel, and practically all of these accidents were due to outright carelessness, and if the same disregard of good practice were used in the handling of other inflammables, similar results would have taken place.

In conclusion, there is nothing mysterious about butane. It has been handled in the oil refineries and gasoline plants for many years, and competent engineers are available to guide and instruct those interested in its use and handling.



**ABOVE:** The Airco portable gas cutting machine, which reduces cutting and labor costs in smoothing edges of plates.



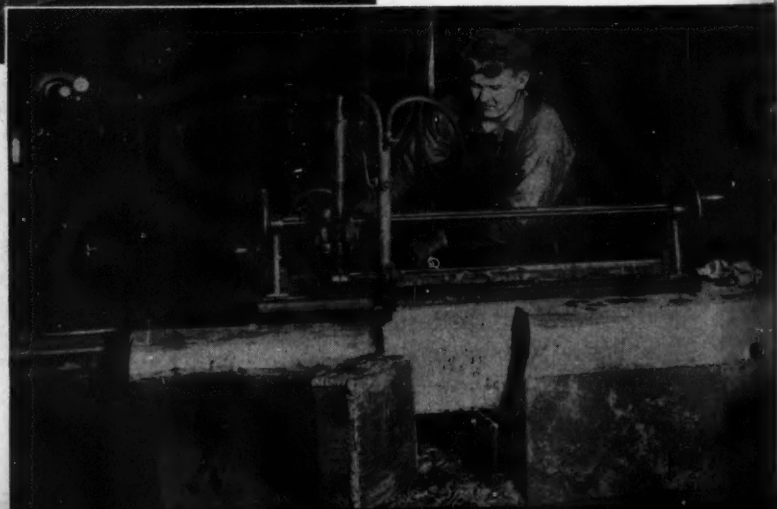
**AT LEFT:** Wreck of S.S. Coos Bay being cut up for scrap, using Shell industrial gas.

**BELOW:** A clean cut with soft surface is being obtained in this manually-operated cutting machine, which is roughing out a crankshaft for a Diesel engine.

---

**Propane torch  
and cutting  
operations.**

---



# Torch Fuel

## Metal Trades Find Propane Superior To Acetylene for Cutting and Brazing

- **THE ACCOMPANYING** article on cutting, welding and brazing with liquefied petroleum gases, as competitive to acetylene, is a composite of information obtained from several authoritative sources, among others, Shell Oil Co., Inc., Standard Oil Co. of California and Victor Equipment Co. All photographs are used through the courtesy of Shell Oil Co., Inc., and the operations pictured are described in that firm's folder entitled, "Shell Industrial Gas for Cutting Steel."—Editor.

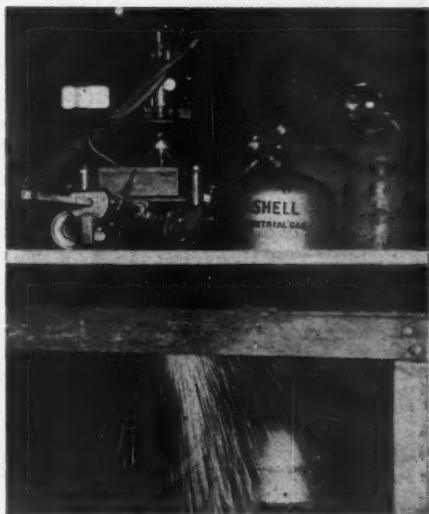
**L**IQUEFIED petroleum gases have their place in cutting, welding and brazing operations. They can and do show material savings in some operations, produce better work in others and make possible some types of welding and burning that have been handled satisfactorily only with hydrogen.

Data have been obtained from users and the advantages of the use of these fuels are presented to acquaint our readers with the possibilities of expanding the use of butane and propane in the industrial fields.

Good welding and its allied operations, cutting, brazing and lead burning, is dependent upon the skill of the operator. Upon him depends the quality of the work and the economy of the operation. It is a trade that requires study and practice and the mastering of difficult technique. Most welders have learned to work with the oxy-acetylene flame and have developed their skill

with it, and so it is necessary to explain and demonstrate to them the characteristics of the oxy-propane flame and the need to use the proper type of tips for best results.

In all metal shops steel cutting is a normal operation. It may be cut by machine or burned by the blow torch. The choice of method is based on comparative costs and quality of work and results required in the finished job.



This Oxweld portable automatic cutting machine is economical for cutting circular plates for blower fans.



TABLE NO. 1. GUIDE FOR TIP SIZES AND OPERATING PRESSURES†

Metal Thickness (Inches)	Aircro D.B.* Series 1200	MAKES OF TORCHES								APPROXIMATE PRESSURES	
		Harris	Na- tional	Oxweld		Prest-o- Weld	Purox	Rego	Victor	Shell Industrial Gas	Oxygen
				C14	CS2						
1/4	0	00	0	1	4	1	1	55	00	2-3	10-15
1/2	1	0	1	1	4	1	1	55	0	3-5	15-20
3/4	1	0	1	1	4	1	1	55	0	3-5	20-25
1	2	1	2	2	6	2	2	53	1	4-5	25-30
1 1/2	2	1	2	2	6	2	2	53	1	4-5	30-35
2	3	2	2	2	6	2	2	53	2	5-7	35-40
2 1/2	3	2	3	2	8	2	3	53	2	5-7	40-45
3	4	3	3	3	8	3	3	49	3	7-10	45-50
4	4	3	4	3	8	3	3	49	3	7-10	55-65
5	5	4	4	4	8	4	4	40	4	7-10	60-70
6	6	4	5	4	10	4	4	40	5	10	65-75
8	6	4	6	5	10	5	4	40	5	10	70-80
10	7	5	6	5	12	5	5	34	6	10	80-90
12	7	5	7	5	12	5	5	34	6	10	90-100

†Prepared by Shell Oil Co., Inc.

\*For Aircro D.B. Torches other than Series 1200, use Harris Calorific Co. tips with Hopane adapter.

When cutting clean steel the oxygen pressure may be reduced from above.

Tip size numbers are the same for both acetylene and Shell Industrial Gas.

Torch cutting is accomplished by preheating the steel with a flame from the torch. When the temperature is sufficiently high a stream of oxygen is jetted by the cutting tip and the steel literally burns away. After the cut has started, the torch is advanced along the line to be cut, preheating the plate, with the oxygen burning the steel. The preheating flame is constant as determined by the pressure of gas and oxygen. The cutting oxygen is controlled by the trigger handle on the cutting torch.

The theoretical amount of oxygen required to make a cut is the same regardless of the type of gas used for preheating. The cut is a chemical combination of the oxygen and iron.

The amount of gas required for preheating will be slightly greater with

propane because the flame temperature of the propane-oxygen mixture is lower than acetylene-oxygen mixture. With the proper type of tip, however, the starting time on a cut can be reduced to close to the time required with acetylene (Table No. 1). Once started, the speed of cutting (inches per minute) can be maintained with no difficulty.

The comparative tests shown in Tables No. 2 and 3 indicate total operating costs in favor of propane as a cutting fuel. Table No. 4 gives a comparison of fuel gases.

In estimating the possible savings to be accomplished, unit costs of acetylene, oxygen and L. P. G. should be carefully weighed, including freight and handling costs of cylinders.

One 100-lb. propane cylinder con-



tains 850 cu. ft. of 2500 B.t.u. gas. The acetylene cylinder holds 275 cu. ft. of 1460 B.t.u. gas. One cylinder of propane is equivalent to five cylinders of acetylene.

Regardless of the relative costs, there are many cutting operations where the quality of the work is of

enough importance to justify a premium for liquefied petroleum gases as cutting fuel.

Where it is desired to have a finished edge it can be accomplished by using L. P. G. It makes a smooth, clean cut with very little slag adhesion which can be easily removed. This is

**TABLE NO. 2. COMPARISON OF CONSUMPTIONS AND COST PER SQUARE INCH**

	<i>1st Test Acetylene &amp; Oxygen</i>	<i>2nd Test Propane &amp; Oxygen</i>	<i>3rd Test Acetylene &amp; Oxygen</i>	<i>4th Test Propane &amp; Oxygen</i>
<b>Oxygen Consumed</b>				
No. 1 meter.....	467184	624648	301609	373850
No. 2 meter.....	456508	613300	296116	371240
No. 1 & No. 2 average.....	461846	618974	298862	372545
<b>Gas Consumed</b>				
No. 1 meter.....	51604.0	35300.0	31544.3	22975
No. 2 meter.....	37651.6	29969.9	30222.6	23310
No. 1 & No. 2 average.....	54628.7	32634.9	30883.5	23142.5
<b>Total Oxygen allowed by Bedaux tables.....</b>				
	598570	703081	429853	507820
<b>Ratio Factor Consumed-Allowed</b>				
No. 1 Oxygen meter.....	.78%	.888%	.702%	.736%
No. 2 Oxygen meter.....	.76%	.872%	.689%	.731%
No. 1 & No. 2 average.....	.77%	.880%	.695%	.734%
Total lineal inches cut.....	1141448	1003414	718444	755485
Total square inches cut.....	1914653	2010479	1325606	1385732
Average thickness (inches).....	1.677	2.003	1.845	1.834
Total Cost of Oxygen.....	\$1,685.74	\$2,259.26	\$1,090.85	\$1,359.79
Cost per cu. ft. of Oxygen.....	\$ .00365	\$ .00365	\$ .00365	\$ .00365
Total cost of gas.....	\$ 614.57	\$ 53.85	\$ 347.44	\$ 38.18
Cost per cu. ft. of gas.....	\$ .01125	\$ .00165	\$ .01125	\$ .00165
<b>Combined total cost of Oxygen and Gas.....</b>				
	\$2,300.31	\$2,313.11	\$1,438.29	\$1,397.97
Cost cents per sq. in. cut.....	\$ .12014	\$ .11505	\$ .10850	\$ .10088
Cost cents per sq. in. (Oxygen).....	\$ .08804	\$ .11237	\$ .08229	\$ .09812
Cost cents per sq. in. (Gas).....	\$ .03210	\$ .00268	\$ .0621	\$ .00276

VALUES AS FOLLOWS: Cost per 100 ft. of oxygen . . . \$ .365  
 Cost per 100 ft. of Acetylene . . . \$ 1.125  
 Propane based on 6 cents per gallon.  
 One gallon equals 36.18 cu. ft., or .00165 per cu. ft.

TABLE NO. 3. DATA AND RESULTS OF COMPETITIVE CUTTING WITH ACETYLENE VS. CALOL CUTTING GAS\*

Type of Fuel	Acetylene	C.C.G.†	Acetylene	C.C.G.	Acetylene	C.C.G.	Acetylene	C.C.G.	Acetylene	C.C.G.
Run Number	1-A	1-C	2-A	2-C	4-A	4-C	5-A	5-C	6-A	6-C
Plate Thickness (inches)	1/4	1/4	1/2	1/2	1	1	2	2	3	3
Tip Number	1	O-CT	1	O-CT	2	2	3	2	3	3
Cutting Speed (in. per min.)										
Machine Setting	18.5	18.5	14.3	14.3	14.3	14.3	13.0	13.0	8.6	8.6
Actual	18.05	18.05	13.85	13.85	13.85	13.85	12.42	12.42	8.1	8.1
Metal Cut (sq. ft. per hr.)	1.88	1.88	2.88	2.88	5.76	5.76	10.35	10.35	10.10	10.10
Fuel Gas										
Pressure (lb. per sq. in.)	3.3	2.0	4.2	2.7	4.4	2.4	3.8	2.6	4.5	3.2
Rate (cu. ft. per hr.)	7.4	4.4	10.1	5.0	15.0	6.4	12.3	7.6	13.8	6.0
Oxygen										
Pressure (lb. per sq. in.)	20.0	19.5	22.0	19.5	35.0	32.0	40.0	42.0	59.0	65.0
Rate (cu. ft. per hr.)	59.5	54.7	63.1	58.3	128	104	164	133	201	188
Cost of gases in dollars per hr.										
Fuel Gas	.111	.044	.151	.050	.225	.064	.185	.076	.207	.060
Oxygen	.595	.547	.631	.583	1.280	1.040	1.640	1.330	2.010	1.880
Total	.706	.591	.782	.633	1.505	1.104	1.825	1.406	2.217	1.940
Cutting cost in dollars per sq. ft. of steel cut	.376	.341	.271	.220	.261	.192	.176	.136	.219	.192
Per cent saving using Calol Cutting Gas		16.5		18.8		26.5		22.7		12.3

REMARKS: All cuts were acceptable to the parties concerned in the competition. Fuel gas and oxygen rates in cubic feet per hour at 60° F. and 14.7 pounds. Cost basis used:

Calol Cutting Gas	1.0¢ per cu. ft. (8½¢ per pound)
Acetylene	1.5¢ per cu. ft.
Oxygen	1.0¢ per cu. ft.

Cutting costs include only cost of fuel gas and oxygen since cuts were made at same machine speed with both gases on a given plate thickness, thereby eliminating cost of labor as a factor in comparing economy.

\*Prepared by Standard Oil Co. of California.

†C. C. G. (Calol Cutting Gas) is predominantly propane, sold by Standard Oil Co.

of great importance in cutting plates and flanges where a machining operation can often be saved.

The reason for the cleanness of the cut is the lower flame temperature. The melting action of the oxy-acetylene causes round upper edges, rough sides and heavy slagged lower edges as the molten metal from the sides flows together and rewelds at the bottom of the kerf.

To get satisfactory results in using propane or butane as a cutting gas, special tips should be used. These tips are recessed, which prevents flash-back and popping. The torch and balance of equipment is the same as used with acetylene. These tips are available and can be obtained from the manufacturers of the cutting torches.

Due to the lower flame temperature it is possible to braze with a L. P. G.-Oxy fully neutral flame without danger of burning the metal. By using such a clean non-carbon depositing flame the weld between the bronze solder and the sheet surface is perfect and the braze has the desired feather edge. Bronze welds made with L. P. G. are more ductile, closer knitted, and consequently stronger.

As in brazing work, L. P. G.-Oxy flame is ideal for lead burning and much more convenient and economical than hydrogen, which is generally used. Its flame temperature is the same as hydrogen (4500° F.) and a clean neutral flame can be used.

In many of these larger installations bulk storage with piped systems is feasible. The principle sales resistance to be anticipated is the lack of knowledge of the product by the operator, and it is up to the liquefied petroleum gas distributor to acquaint the potential

TABLE NO. 4  
COMPARISON CHART OF FUEL GASES\*

	Shell Propane	Acetylene	Hydrogen
Chemical formula..	C <sub>3</sub> H <sub>8</sub>	C <sub>2</sub> H <sub>2</sub>	H <sub>2</sub>
Cu. ft. of gas in cylinder.....	850	275	220
Flame temp. with oxygen deg. F....	4500°	6100°	4500°
B.t.u. per cu. ft.....	2500	1457	380
B.t.u. per lb.....	21,633	20,034	53,000
Wt. gas in cyl. lbs..	100	20	1.58
B.t.u. per cylinder..	2,163,000	400,675	83,600
Ratio of cyls.,			
B.t.u. basis.....	1	5.22	25.87
Therms per cyl.....	21.63	4.0	0.83
Cyl. tare wt., lbs.....	115	200	160
Ratio tare wt.,			
B.t.u. basis.....	1	10	35

\*Prepared by Shell Oil Co., Inc.

users with the qualities of the fuel in order to enjoy this type of business.

In conclusion, liquefied petroleum gases are both competitive and superior for cutting and brazing operations, and a large field for this type of use is open. These fuels are particularly adapted to the larger cutting jobs such as in steel mills, plate and boiler shops, steel fabricators, scrap yards and steel foundries.

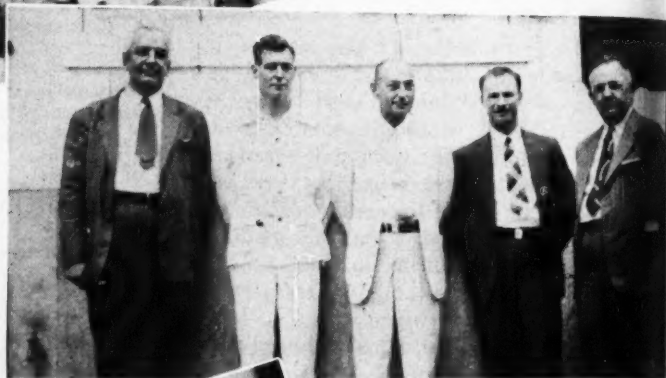
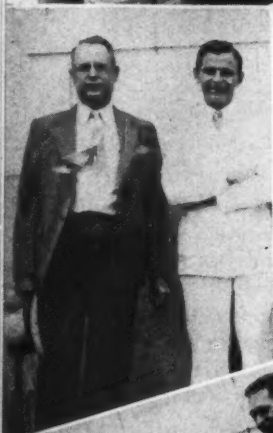
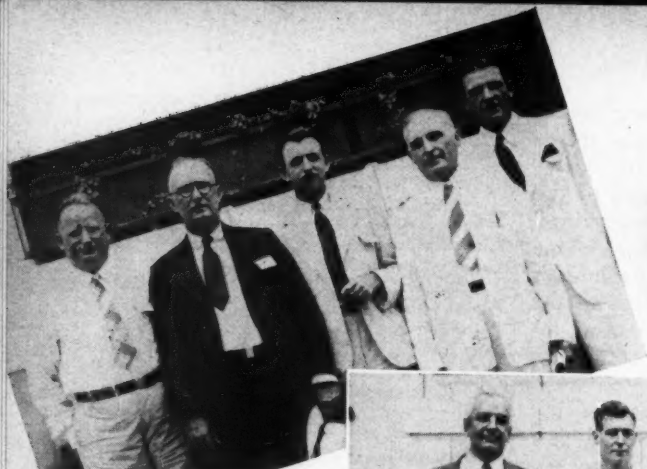
■ ■

### Butane Gas Systems Installed In Four Oklahoma Schools

Butane gas systems were installed during July in several Oklahoma school buildings by The Southwest Factory, Oklahoma City, A. L. Tucker, manager. Each installation included a 1000-gal. tank equipped with low and high pressure safety cut-outs.

The system at the Washington high school, Ardmore, Okla., replaced a coal burner. Butane gas burners were installed under the steam boiler which was a part of the coal heating plant. Other installations were in schools near Cordell and Norman, and at Pond Creek, Okla.

# PEOPLE.



Seventeen per cent of the representatives to the New Orleans June Convention of the Southern Section, Liquefied Petroleum Gas Association appear upon this page. Photographs of many more attendants appeared in the July issue of BUTANE-PROPANE News.

AT TOP OF PAGE: J. P. Dockery, John Dockery, J. E. Gardner, E. M. Yerger and Alfred Dockery, all of Dockson Gas, Inc., Jackson, Miss. LEFT CENTER: S. J. Eubank, Ideal Butane Gas Co., Houston, Texas, and D. J. Schowalter, Farm and Home Equipment Co., Abbeville, La. RIGHT CENTER: H. W. Martin, Ralph N. Brodie Co., New Orleans; E. H. Simpson, Jr., and E. H. Simpson, Sr., both of Independent Petroleum Corp., Jackson, Miss.; H. G. Hemberg, Yale & Town Mfg. Co., Stamford, Conn., and J. H. Winton, Winton Automatic Gas Co., Beaumont, Texas. BELOW: E. R. Theriot, Butane Gas Co., Houma, La.; Robert W. A. Robinson, Hydro-Gas, Pensacola, Fla.; M. H. Nabors, Shell Oil Co., Inc., New Orleans; Luke Abramson, Petrolane Gas Corp., New Orleans, and Quentin Jones, Butane Gas Co.

# At Work and Play "Beyond the Mains"



Skelgas men in round-table conference. They are: Van Bloomberg, Moline, Ill. (back to camera); W. Jackson, South Bend, Ind.; W. W. Overman, Kansas City; W. B. Ockerhausen, St. Louis; E. J. Thompson, Springfield, Ill.; G. R. Collins, Nameoki, Ill., and Chas. W. Goodman, Evansville, Ind.



ABOVE (at right): A. N. Kerr, Imperial Gas Co., Los Angeles; P. W. Ensign, Ensign Carburetor Co., Los Angeles, extending welcome to Ross W. Thomas, and, waiting his turn, K. W. Rugh, both of Philgas Dept., Phillips Petroleum Co., the last two from their Detroit office, and on a July tour of the Pacific Coast. CENTER (at right): B. D. Geroy, general manager, Illinois Bottled Gas Co., and Phil Niederman at one of their Chicago bulk plants. BELOW: Sam Kapnek, Natural Gas Co. of N. J., Hammonton, N. J.; W. F. Verkamp, Verkamp Corp., Cincinnati; Mark Anton, Suburban Gas Co., Livingston, N. J.; Peter A. Anderson; Plumer Pope, Fuelite Natural Gas Co., Lexington, Mass.; E. Martin Anderson; and C. E. Lausten, manager, Bartlesville office, Philgas Dept., Phillips Petroleum Co. (Taken outside Phillips Petroleum Co. laboratory, Bartlesville, Okla.





---

Butane-powered equipment  
of Uvalde Construction Co.,  
Dallas, operating in Wise  
and Brazos counties, Texas.

---



# Large Construction Firm Is Converting Road Equipment For Use With Butane

**U**VALDE Construction Co. of Dallas, Texas, one of the largest contracting firms operating in Texas and the Southwest, is a recent convert to butane gas for power purposes, having changed over for use with this fuel two model LO, one model L and one model SO Allis-Chalmers tractors, together with an 85-hp. Buda engine, within the last 90 days. Also, the company has just purchased a Waukesha 220-hp. engine which will be operated on butane.

This equipment is now employed on road construction jobs in Wise and Brazos counties, Texas, and providing motive power for scrapers and blades. The two engines supply power to operate a rock crusher in Wise county.

Although adequate records of operation are not available after so brief a period of service, W. P. Bentley, president of Uvalde, says he is very pleased with the showing being made by butane with the equipment.

The company operates its own 1200-gal. tank truck for the transport of butane, depositing the fuel directly into the equipment tanks. A 1200-gal. tank is provided for use with the two crusher motors.

In making the changeover there was very little work to be done on the stationary motors other than installing carburetors and performing a small amount of pipe work for connections between the tanks and carburetors.

On the LO and SO tractors the same heads, pistons and rings were used as previously but were installed new before making the butane installation. The 70-gal. butane capacity tanks for these tractors were installed at the same place as the old gasoline tanks. The same operation was followed on the model L tractors except that only one carburetor was used where two gasoline carburetors had previously been used. It was necessary to make some changes on the manifold because of doing away with one of the extra carburetors.

Uvalde Construction Co. recently completed the pile-driving job for the approaches to the Mississippi River bridge construction project nearing completion at Baton Rouge, La. The company also had charge of driving test piling for the approaches to the Mississippi River bridges now under construction at Natchez and Greenville, Miss.

■ ■

## P. Rasmussen Takes Over Agency For Butane Gas in Nebraska

Announcement was made in June that Pete Rasmussen has taken over the Nebraska state agency for the Mid-Continent Butane Gas and Equipment Co. Some Kansas territory is included. Lyle Quakenbush and Norris Price are also members of the firm. Headquarters will be at York, Neb.

In addition to handling butane gas and installing gas systems, the firm will sell appliances equipped for use with L.P.G.

# Industrial Purchases of L. P. G. Advance 250 Per Cent in California in 1938

**S**ALES of liquefied petroleum gases by California marketers in 1938 showed a gain of 17.5 per cent, represented by 35,140,000 gals., over 1937's sales of 29,910,000 gals., according to the late May report of the U. S. Bureau of Mines, Petroleum Economics Division.

Sales for bottle (domestic) gas advanced 2,338,000 gals. to a total of 10,981,000; sales for gas manufacturing purposes increased 1,331,000 gals. to a total of 6,751,000 gals., and those for industrial fuel made the largest percentage gain of all, jumping from 312,000 gals. in 1937 to 1,089,000 gals. last year. Exports were negligible in quantity.

While the 1938 increase of 17.5 per cent was substantial, it fell short of the 26 per cent advance registered in 1937 over 1936, due, it is believed by

government officials, to "comparative torpidity in internal combustion-engine fuel sales," which, in turn, is thought to be greatly influenced by the completion of several large construction jobs upon which liquefied petroleum gas was used in large quantities. The 1938 increase in such sales totaled but 927,000 gals. as against nearly three times that amount for 1937 over 1936.

Interesting to note, the total gain in California sales was one-half of one per cent more than that averaged by the rest of the United States. Or, stated differently, California's 1938 sales represented 21.3 per cent of country-wide sales volume of 165,201,000 gals. (See BUTANE - PROPANE News, July, 1939, pp. 12-16.)

The figures in Table No. 1 do not include liquefied petroleum gases used directly by the producers for fuel,

**TABLE NO. 1. LIQUEFIED PETROLEUM GAS SALES BY CALIFORNIA MARKETERS  
(1938 AND 1937)**

Uses	(Thousands of gallons)							
	Propane		Propane-Butane		Butane		Total	
	1938	1937	1938	1937	1938	1937	1938	1937
Domestic .....	6,701	5,863	2,641	1,740	1,639	1,040	10,981	8,643
Gas Manufacturing .....		10	2,487	2,522	4,264	2,888	6,751	5,420
Industrial Fuel.....	282	312	807	.....	.....	.....	1,089	312
Solvents and Chem. Manufacturing.....	.....	.....	.....	.....	.....	.....	.....	.....
Internal Combustion Engine Fuel.....	.....	.....	14,148	13,693	1,833	1,361	15,981	15,054
All Other Uses.....		81	.....	130	336	158	336	369
Total.....	6,983	6,266	20,083	18,085	8,072	5,447	35,138	29,798



# Accent on **MORE SALES**

## *Brilliant Fire* **Merchandising Plan**

provides direct-franchising of Dealers Pro-  
motional numbers plus Planned Local Adver-  
tising insure increased store traffic . . . more  
sales and profits

**WRITE FOR DETAILS**



TO THE ALERT APPLIANCE DEALER, Servicing Cost is a vital factor. Appliances must offer tested design, precision workmanship and exacting inspection. In brief, they must be practicable and workable. Above all, profits should not be dissipated on costly servicing after installation.



**SPECIALIZING IN QUALITY  
HEATING EQUIPMENT  
SINCE 1846**

# **BRILLIANT FIRE** *Gas* *Heaters.*

**For BUTANE . PROPANE Gas**

**The Ohio Foundry & Manufacturing Company**  
Steubenville, Ohio . . . U. S. A.

**TABLE NO. 2. SEGREGATION OF TOTAL SHIPMENTS BY METHOD OF TRANSPORTATION**

<i>Uses</i>	<i>Propane</i>		<i>Propane-Butane</i>		<i>Butane</i>		<i>Total</i>	
	1938	1937	1938	1937	1938	1937	1938	1937
Bulk Shipments.....	276	196	19,836	14,515	7,790	5,307	27,902	20,018
Cylinder and Drum Shipments .....	6,707	6,070	247	3,570	282	140	7,236	9,780
Exports* .....	2	4		108			2	112
Total Sales.....	6,985	6,270	20,083	18,193	8,072	5,447	35,140	29,910

\*1938 exports incomplete.

polymerization, solvents, de-waxing, blending with gasoline or as raw material in chemical plants, of which there is a very large amount consumed, says the report. The reasons these figures are not obtainable is that such gases are not sold.

However, production figures obtained from other sources show that during 1938 there was a total Pacific Coast volume of 46,000,000 gals., and the difference between this amount and the 35,138,000 gals. reported as sales, or 10,862,000 gals., evidently represents the approximate amount used by the producers themselves.

The total production of liquefied petroleum gas was obtained from various sources. The major portion, which fluctuated between 3,208,000 and 4,625,000 gals. monthly last year, was manufactured at gasoline plants. Volumes ranging from 600,000 to 1,400,000 gals. monthly were obtained from natural gasoline rectifying operations at refineries, while 500,000 to 1,130,000 gals. monthly were made from cracked gases at refineries. Throughout 1938 stocks at the beginning of each month varied between 1,470,000 and 1,730,000 gals.

Table No. 2 segregates shipments.

### **Worthington Gas Co. Expands Philgas Division Rapidly**

The Philgas Division of the Worthington (Minn.) Gas Co. was opened on July 1, 1938, and the company report of July 1, 1939, shows 1000 rural customers on the books. Four hundred of these were added between May 1 and June 26. The territory covered includes large sections in southwestern Minnesota, northern Iowa and southeastern South Dakota, and is under the direction of H. N. Hoaglund.

The personnel of the Philgas Division now includes four office employes, three plant men, seven salesmen and seven service men. Recently a home service department was added and placed in charge of Susan Taylor.



### **Union Gas & Equipment Corp. Will Operate in Colorado**

The Union Gas & Equipment Corp. has recently been organized to exercise an exclusive franchise for the sale of Automatic Gas systems in Colorado. Headquarters will be in Pueblo, and the officers are Walter K. Hurd, president; John T. Liggett, vice president and treasurer, and W. B. Beaver, secretary and general manager. Several branch offices will be rapidly established throughout the state.

The Automatic Gas systems, truck and storage tanks will be designed to handle propane exclusively because of the climatic conditions in Colorado. The systems are manufactured by the Automatic Gas Equipment Co., in Dallas, Texas.

# *So Beautiful...* **YOU WON'T BELIEVE IT'S A HEATER!**

**WARM AIR  
CIRCULATOR**

**NEW!**

Write Today for  
**SPACE HEATER  
CATALOG**

And Details of New  
Fall Merchandising  
Program.

★ Pacific sales are all profit  
— no costly after service —  
every customer a booster!

**WRITE NOW**

Pin to your letterhead . . . Mail today.

Pacific Gas Radiator Co. Dept. B N 8  
1740 W. Washington Blvd., Los Angeles  
Send complete literature and prices on—

Name.....

Address.....



**26 Successful Years**



**... and still growing!**

# *Pacific* **THERMOLATOR**

**BUTANE-PROPANE News**



# Nebraska Meat Packing Plants Reduce Fuel Costs One-Third With Butane

**T**HE adaptation of butane gas for packing house boilers and smokehouses is a development in the Middle West that broadens the field for uses of liquefied petroleum gases. The Rural Gas Service Co., Inc., of Beloit, Kan., has made three such installations thus far, they being in the plants of the North Platte Packing Co., Flicker Brothers and Krumm Packing Co., North Platte, Neb., and the Star Packing Co., Sidney, Neb.

Regarding these installations, Paul Plott, manager of the company's Fort Morgan, Colo., store, states:

"One packing house that we supply with butane uses it in the boilers and four smoke houses, there being a supply tank that furnishes 1,600,000 B.t.u. per hr. We have found by ac-

tual tests that we have cut the fuel operating cost of this packing plant one-third, and with the burners all automatically controlled we have eliminated a lot of extra work and worry formerly necessary to keep the boilers and smokehouses at an even temperature. The Sonner burners in the boilers only burn 18 minutes out of every hour. There are two 50,000-B.t.u. ring burners for each smokehouse, and all plants are equipped with Minneapolis-Honeywell thermostats ranging from 60°F. to 210°F. temperature so that the heat can be set for hams and bacon exactly as desired."

The Rural Gas Service Co., Inc., employs 28 salesmen, six plumbers, six truck drivers, three stockmen, a large office force and operates in the four



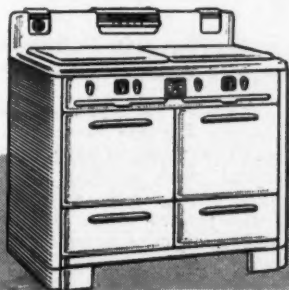
A 2600-gal. butane tank truck of the Rural Gas Service Co., Inc., one of many delivery trucks supplying branch stations and dealers in Kansas, Nebraska, Colorado and Wyoming.

**"You Bet, We Like Our  
New Bottled Gas Roper"**



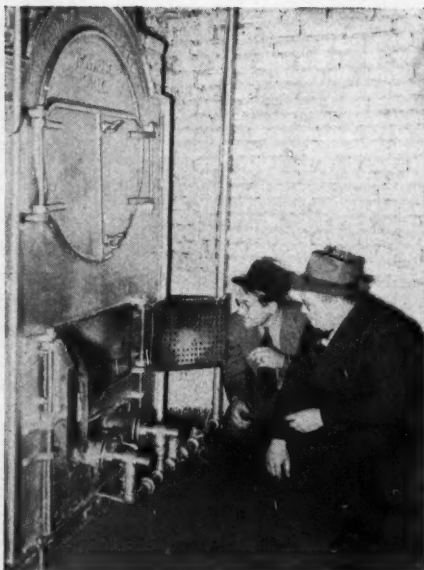
## **ROPER GAS RANGES**

Folks who live beyond the gas mains have found they can enjoy the same fine advantages with a Roper Bottled Gas Range as they could expect from a Roper built for "city" gas. There's a reason. Roper Bottled Gas Ranges have been designed especially for use with Bottled Gas. They are outstanding for the purpose. You'll find splendid acceptance for Roper. Write now for complete information.



**GEO. D. ROPER**  
CORPORATION

General Sales Offices and Factory: Rockford, Ill.



Lee Sanders, president of Rural Gas Service Co., Inc., and Albert Interholzinger, of the North Platte Packing Co., look over the new butane equipped boiler at the packing plant.

states of Kansas, Nebraska, Colorado and Wyoming. It is the outgrowth of a manager and one-man organization started in August, 1937, by Lee Sanders. In addition to serving over 1500 customers with "Algas" (butane), the company handles a full line of appliances.

Orders have recently been placed with the Butler Manufacturing Co. for two more 1500-gal. transport fuel trucks, which will make a total of 12 tank and delivery trucks. An order has also been placed for seven carloads of underground gas tanks to be used in the Colorado territory.

The latest branch office to be opened

is at Fort Morgan, Colo., to serve customers in the eastern part of Colorado and western Kansas and Nebraska. Another store and warehouse is located at Big Springs, Neb., and a 14,000-gal. bulk station is located at Scotts Bluff, Neb. Dealers of Rural Gas Service Co., Inc., are Joe Mullen, North Platte; Jake Engel, Big Springs; Leo Burke, Sidney; Harold Con, Broken Bow; Lee Fuller, Valentine; Tom Quigley, Hyannis, all in Nebraska; Hugh Fenton, Holyoke, Colo., and V. G. Ratcliffe, Sterling, Colo.

G. M. McClelland became general credit manager of the corporation on July 1.

■ ■

### Rural Users Given Leasing System By American Butane Gas Co.

J. L. Grigsby, president, American Butane Gas Co., Oklahoma City, Okla., has announced a new gas service beyond gas mains which will enable tenant farmers, as well as owners, to have gas service without such a large investment in equipment.

Butane gas systems are being installed and leased to consumers. A meter is installed and service men read it once a month. Monthly bills are rendered.

"The fuel we use is liquefied petroleum gas, 99.6 per cent pure, containing butane and propane," said Mr. Grigsby. "With this service we will be able to reach hundreds who are unable to make the initial investment in necessary equipment."

■ ■

### Pyrofax Gas Used in Publication Work Raises Quality of Printing

Pyrofax liquefied petroleum gas has been adopted by the *Warroad Pioneer*, the Warroad, Minn., newspaper, to improve the quality of its high grade printing jobs. A gas rod installed on the press at point of delivery of the printed sheets dries the ink more quickly than other forms of heat, and thus permits heavier inking, resulting in greater clarity and contrast.

# COMPETENT



A part of the country's largest producer-owned fleet  
of special liquefied petroleum gas tank cars.

## TO SERVE YOUR NEEDS

Whether you need Propane, Butane or mixtures, Philgas has (1) the raw materials, (2) the transportation facilities, (3) the trained engineers and (4) the experience needed to serve you best. It costs less in the long run to have the help of the competent Philgas organization.

*Philgas*  
DEPARTMENT

PHILLIPS PETROLEUM COMPANY  
GENERAL MOTORS BUILDING  
DETROIT, MICHIGAN

NEW YORK  
PHILADELPHIA  
CHICAGO

BARTLESVILLE, OKLA.

MILWAUKEE  
ST. LOUIS  
AMARILLO

---

NATION'S LARGEST MARKETER OF LIQUEFIED PETROLEUM GASES

---

BUTANE-PROPANE News

REGO...





# SAFETY RELIEF VALVES

incorporate patented

## "POP" ACTION AND TIGHT-CLOSING DESIGN

Rego Safety Relief Valves are designed especially for protecting liquefied petroleum gas storage containers against dangerously high pressures. Excessive pressures result from:

Accidental overfilling, or filling with a cold liquid which later expands, causing a liquid-full condition.

External heat, which raises the temperature and pressure of the gas.

Rego Relief Valves prevent dangerously high pressure, regardless of the cause. These valves also close automatically after the excess pressure has been relieved. Safety devices such as frangible discs and fuse plugs have no means of closing automatically and therefore after being called upon to open they will remain open until the entire contents of the container are exhausted, even after the pressure or temperature is no longer excessively high. This results in a serious fire hazard.

The exclusive "Pop" action feature of Rego Safety Relief Valves assures full opening of the valve before the pressure becomes dangerously high. This is essential for liquefied petroleum gas installations and it is a feature not found in ordinary relief valves.

Rego Relief Valves are provided with resilient seat discs which insure tight closing of the valve and mitigate leakage.

FOR SAFE INSTALLATIONS SPECIFY REGO RELIEF VALVES.

*The* **BASTIAN-BLESSING** *Company*

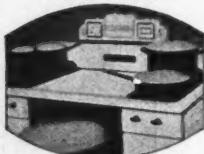
258 E. ONTARIO ST.

CHICAGO, ILL.

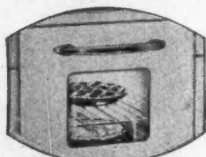
**TAPPAN'S MORE ADVANCED  
FEATURES WILL GET YOU  
MORE USERS**



**VISIGUIDE**



**The Original  
DIVIDED+TOP**



**VISUALITE  
OVEN**



**T**he growth of your business depends so much on maximum customer satisfaction.

Tappan's leadership in the liquefied gas field results from efficiency and service-free performance, achieved through many years of specialized engineering and constant development.

Only Tappan provides these three great advantages in one range: *Divided+Top* for extra capacity, convenience and safety; *Visualite Oven* with glass door and interior

light, that takes cooking "out of the dark" and gives the housewife greater confidence in all her oven operations; *Tappan Visiguide*, that provides time and temperature directions permanently right at her finger tips, for over a hundred cooking operations!

Where else can you find an unbeatable combination like this? Write for full details on Tappan's Sales Making Plan.

**TAPPAN STOVE COMPANY**  
Mansfield, Ohio

*Lifetime Burner Guarantee*

**TAPPAN** *Gas Range*

# School Piping Specifications

THE following L. P. G. piping instructions for school installations are those of the Stargas Dept. of Lone Star Gas Co., Dallas, Texas, and published by permission:

**General:** A main 2-in. feed line shall be laid such as to completely surround the building. It shall be laid clear of any concrete walks and shall be on the opposite side from the school building of all walks that are laid parallel to the building walls, and 2 ft. away from the nearest edge of such walks. Main line loop shall not be closer than 6 ft. from outside foundation wall at any point. This line shall be not less than 24 in. below the ground surface at the shallowest point and shall be laid to grade such that the section on the south side of building will be the lowest section. The minimum grade shall be 3 in. per 100 ft. No traps or sags will be allowed. All joints in this main feed line shall be welded.

All lateral lines that supply the individual appliances shall be connected to the main feed line at a point on the top side of the main feed line, and shall extend directly to the outside of the foundation wall immediately under the conduits provided to facilitate passage through walls of the building, and shall be laid to same grade as above, with the top of main feed line being the lowest point in each lateral line. The riser connecting the buried portion of each lateral with the section that passes through the building wall shall be adjacent to the foundation on its outside and perfectly vertical. Two swing joints shall be made in each lateral connection, one where lateral connects to main supply line and the other where lateral rises.

All appliances shall be rigidly connected, using iron pipe. Two-in. conduits shall be laid in foundation at time of pouring to facilitate connecting corridor radiators safely.

The service line connecting service units with main feed line shall be 2 in., and shall be laid to same grade as main feed line and shall tie into main feed line at any convenient point other than on the low section on the south side.

The service units shall be located not closer than 50 ft. to the building and shall be not greater than 35 ft. from a point to which service truck can be driven. The service units should be in a fenced enclosure to prevent tampering by children or irresponsible parties.

**Pipe and coating:** All 2-in. pipe shall be standard line pipe, factory wrapped. All welded joints must be coated with hot pitch and wrapped same as pipe. All 1-in. and ½-in. shall be standard line pipe. Where these sizes are buried, such buried portions must be coated with hot pitch and wrapped same as factory wrapped pipe.

**Fittings:** Only the lateral lines will require fittings. All iron pipe fittings shall be standard galvanized. No unions will be allowed except at each appliance to permit their connection and only ground joint unions will be permitted there.

**Cut-offs:** Cut-off valves, where not provided on the appliance, shall be installed inside on each lateral and just ahead of each ground joint union so that if an appliance has to be disconnected at any time, the gas to that appliance may be cut off.

**Thread compound:** Wherever a thread joint is made, "Sta-Lastic," manufactured by Sta-Lastic Manufacturing Company, 310 East 14th Street, Kansas City, Mo., must be used, without exception, and must be applied to the male thread without allowing any to run into pipe end.

**Testing piping:** After piping is complete and before connecting any appliances or the service unit, also before covering buried portions, cap all openings in building and connect service pump and gage to open end of service line. Pump up entire piping system to 15 lbs. gage pressure and allow to stand for 60 minutes. If the pressure drops, a leak exists. If the pressure does not drop, the piping is tight and the appliances and service may be connected and the ditches filled. The ditches should be water tamped, preferably.

**Sealing:** After piping has been installed, tested and radiators connected, all thimbles and conduits must be sealed both inside and outside with cement, preferably.

# SELLING

## Stick to the Point

THE following breezy and constructive contribution comes from a reader of *Selling* who is kind enough to act on the suggestion made in the first issue of BUTANE-PROPANE *News* and share the benefit of his selling experience with other readers. We hope that others will follow his lead.

"I used to have a lot of trouble," he writes, "keeping my sales interviews to act on the track, if you know what I mean. Everything would be going along nice and smooth, with the prospect full of interest, asking lots of questions, and getting a full load of good juicy sales points, when all of a sudden, I'd come to with a start and discover that our train of thought had jumped the track somewhere along the line, and we weren't talking about gas ranges any more, but about how to get lumps out of paint or the art of growing dahlias or some other phoney subject equally far away from the product I was trying to sell. And by the time I'd get the thing stopped, back up and get on the track again, I'd find the prospect had enjoyed our conversation and hoped she could continue it some other time. The sale had gone 'phuit.'"

"I got to thinking about this trouble after it had happened enough times to really hurt, and I came to the conclusion there were at least two reasons why I got myself into difficulties. For one thing, we all like to get on a friendly footing with our prospects,

and there is no easier way to do so than to find out what a prospect is interested in and talk about it. So you are feeling your way, trying to find a lead to a nice friendly basis with your customer — one that will permanently set you right with him — and the subject of golf comes up, say. You find he is a golf fan, and the first thing you know you are talking about the relative merits of steel versus wood shafts instead of ring burners and thermostatic controls.

"That's one way to get shunted off on a branch line. Another way is to let yourself get pulled into explaining a point the customer is anxious to have cleared up and wind up somewhere away off the subject. In an interview I remember the prospect asked if the porcelain enamel on the range I was demonstrating would chip from sharp blows. I assured her it wouldn't under ordinary circumstances, and we got on the subject of how porcelain enamel was baked onto the metal, and from there we went into a discussion of metals and enameling materials. She was an artist and had worked in pottery and naturally was interested in heat-treating and so forth. The first thing I knew the prospect looked at her watch and said, 'My goodness! I've got to go. I'm 10 minutes late now. Thank you for telling me all about porcelain!'

"In this case, you'll notice, the interview got sidetracked because of the prospect's interest in a particular feature of the range which tied in with her profession. The reason I followed it up was that it looked like a good lead to capture and hold her attention. The trouble with digressions of this sort is that you find yourself out in the

## DOTTED LINE ROSCOE



"Since the sales chief got back from New York he sold the Company on building a trylon next to each holder."



middle of them before you realize what is happening; you've lost control and the sale has gone out the window.

"What I should have done in the instance above is simple enough. I should have taken advantage of the prospect's interest in the porcelain enamel, and pointed out that the quality of the product is a result of the use of gas in its manufacture, the fuel being so easy to control that the uniformity of the product is assured. From there it would have been an easy step back to the appliance, and I would have had an opening to call her attention to the range heat controls.

"I have learned that trick now. I stick to the main line of my sales story, and if the prospect wants to digress, I pull her back quickly and tactfully by tying in a related sales point and refocussing her attention on the product. I had to practice before I got the knack of the thing, but I find that it has paid dividends."

## Pay As You Leave

WHAT is the market for gas and gas appliances? And how can a dealer or salesman get his share of the business that annually develops in that market? These are two pertinent questions, the answer to which may be found in a set of government figures recently compiled.

One survey shows that at least 80 per cent of the nation's wage earners belong in the \$1200-\$2000 a year income bracket, which ought to be a pretty good indication of where the big market for any kind of merchandise is. But it is shown also that if people were required to lay cash on the barrelhead

for their gas appliances, this market wouldn't amount to a great deal.

For the United States Department of Labor made studies which prove that 77 per cent of the average family's income goes for food, clothing, housing, and medical care—the primary essentials for existence. This means that in any year, even at the top of the income bracket in the market we are considering, there is left but \$460 to be devoted to the purchase of all the other things people want and need.

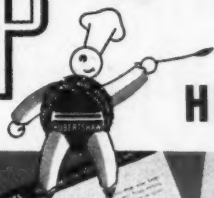
Obviously, with a slim surplus of around \$40 a month to cover the cost of those other things—insurance, automobile upkeep, entertainment, savings, furniture, etc.—the gas appliance merchant cannot expect to secure a very sizeable chunk of that \$460. There are too many other claims. What's the answer?

Terms, of course. And we mean terms that cover a sufficient period of time to be a real inducement. The average family could probably manage to take up payments on an automatic gas water heater, for instance, over a 12-month period, or even to pay cash for it. But in the higher-price appliances—ranges, refrigerators—the payments would have to be spread over two, three, or even four years.

"Those merchants," one authority says, "who have recently extended their terms to longer periods or who are contemplating such a move will find ample evidence of the soundness of installment selling in the records. Out of 500 sales financing companies in the United States during the depression years, all but five survived and are thriving concerns today. To get volume, long terms consistent with good business seem to be necessary."

# HELP

## FOR YOUR SALESMEN!



## HELP FOR YOUR SALES!



### An entirely new kind of sales manual, easy to read as the sports page, overflowing with practical **IDEAS FOR GAS RANGE SELLING**

How can your salesmen sell more gas ranges? "More Income" shows—so simply, so graphically, so convincingly that any salesman who gets it in his hands goes out armed with new knowledge and new enthusiasm.

Here in this compact, hip-pocket manual

are **FACTS** gathered from authoritative sources throughout the country, ideas secured from successful gas range salesmen.

Here too are **METHODS** to apply, clearly explained in pictures, with the very minimum of words. Here is a manual that talks with the salesman, not at him.

*Write today for **FREE** copies for your staff!*



Planned only to help make gas range selling more productive, "More Income" contains not a single boost for Robertshaw but many a boost for your sales. Tell us how many copies you need and we'll send them to you with pleasure.

**ROBERTSHAW** THERMOSTAT COMPANY  
YOUNGWOOD • PENN

# "The Fair's the Thing," Says Texas Dealer; Exhibit Psychology Wins Friends, Sales

By CRAIG ESPY

**W**E DON'T know the comparative figures, but Texas reputedly has more county and town fairs, festivals and rodeos than any other state. So a Texas butane company which operates over a wide area and which believes in the value to be gained from exhibiting at these affairs should be the first one to work out a successful technique.

R. L. Edwards, president of Edwards Gas Appliance Co., San Antonio, is the man we interviewed on this subject. Mr. Edwards, probably the first butane operator in the state of Texas, started in 1933 to install butane underground tank systems for domestic and commercial purposes. His company, previously known as Pittsburg Water Heater Co., was incorporated under its new name last June.

Mr. Edwards suggested that we go to the Chamber of Commerce in San Antonio to get an accurate list of the territorial fairs being held currently. There we found on their calendar 11 fairs scheduled for the month of June alone.

Mr. Edwards did not exhibit at all these locations. He maintains only one traveling exhibit, and some of the fairs are held outside his most fertile area, although he does operate over most of the state except in the Panhandle. He reached out for the principal fairs, though, for he believes strongly in

their worth as a means of getting the story of butane to his rural user and prospect. He says the fair is decidedly his best approach from the standpoint of publicizing the system to small city and farm ranch population.

The exhibit which this company has found to be most practical is one which is easily assembled and taken down and which can be transported by truck from point to point. The exhibit is housed underneath a 12x14-ft. canopy top. The walls, easily removable, are held together with unions. The back wall remains in place when the exhibit is set up, but either of the sidewalls can be removed to suit conditions.

The movable background is trimmed in black to lend emphasis to the white appliances. The name of the company product, "Hydro-Gas," appears in large, black letters across the exterior top portion of the exhibit. The underground tank system is placed in a specially constructed cradle which can be rocked in any direction by the one looking at the system or by the demonstrator.

Partly due to the advice of an ex-carnival man who attends the exhibit, and partly because experience has suggested it, the company does not put forth as much apparent effort as it once did to make exhibiting a success. That is, the exhibit is now conducted

*Why it pays to insist on*

# STANDARD

## LIQUEFIED PETROLEUM GASES

**S**TANDARD liquefied petroleum gases give you all these advantages: (1) *Highest quality*—assured by Standard Oil's superior refining facilities; (2) *Prompt deliveries* and unfailing supplies—assured by ample tank-car equipment and the largest distributor fleet of high-pressure tank trucks in California and Arizona; (3) *Complete odor safety*—assured by the protection of "Calodorant" gas-odorizing agent; (4) *Helpful service*—Standard Oil engineers, technicians and distributors are always ready to work with you in the development of processes for the most efficient use of these fuels.

*Ask any Standard Oil representative for further information.*

**CALOL** Reg. U. S. Pat. Off.  
INDUSTRIAL GAS No. 1  
(Commercial Butane)

*For:* Gas manufacture or enrichment; Industrial fuel; Chemical and metallurgical purposes. (Facilities available for tank-car delivery, and tank-truck delivery)

**CALOL** Reg. U. S. Pat. Off.  
INDUSTRIAL GAS No. 2  
(Commercial Propane)

*For:* Domestic fuel purposes; Industrial fuel; Steel cutting, brazing, etc.; Chemical and metallurgical purposes. (Tank-car delivery, and steel-cylinder delivery—91-lb. or 41-lb. capacity)

**BU-GAS** Reg. U. S. Pat. Off.  
LIQUEFIED PETROLEUM GAS

*For:* Heavy-duty internal-combustion-engine fuel; Industrial fuel; Heavy-demand domestic fuel purposes. (Tank-car and tank-truck delivery)

STANDARD OIL COMPANY OF CALIFORNIA

more from the viewpoint of the man or woman who attends the fair, and herein lies a chief point of success, it is believed.

It is realized, for example, that many farm and ranch people are shy and timid. Therefore, the employee attending the exhibit deliberately leaves the booth occasionally so that some of these people can take advantage of his absence to come in and look over the system according to their own whims and depart with a piece of literature.

It is also known that many farm people attend a fair in order to see and visit friends they haven't contacted since the previous fair. These people want to look at the exhibits but frequently do not want to buy. Nor

do they want to have a sales story "poked" at them. Many also rebel at having their friends see them in the process of being sold something.

So Edwards Gas Appliance Co. has learned to work smoothly, takes events and people as they come, gives them information when it is sought but never forces the issue in any way. However, an earnest prospect can be quickly spotted, and before he has gone his name and address for follow-up have usually been secured.

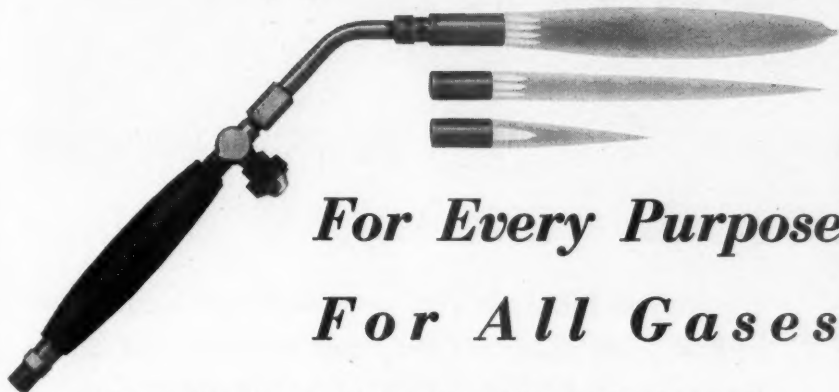
Then there is the stunt of doing something special to draw the people into the booth. This is a natural for the Edwards attendant, Tiny Gordon, because he was formerly a baker. He just sets to work and bakes a cake. He



San Antonio showroom of Edwards Gas Appliance Co., formerly Pittsburg Water Heater Co., and distributor of Hydro-Gas systems in wide Texas territory.



# FORSTER TORCHES



*For Every Purpose*  
*For All Gases*

Shown above is one of a large line of Forster Torches, available in a wide range of types and sizes, made for every conceivable purpose. Some throw small sharp flames for use in radiator and battery work—others throw large flames as required in pre-heating, weed burning, snow melting.

From large to small—we make them all—they're used in every garage, factory, foundry, laboratory, tin shop; by painters, plumbers, welders and mechanics. If you have butane, propane or natural gas available, you can use the torches illustrated in our new catalog. Write for our catalog and the name of your local distributor.

*We are prepared to design and install industrial butane standby plants, public service gas plants, as well as automotive and stationary engine conversions. Your inquiries are solicited.*

## **RANSOME COMPANY**

*Manufacturers of Forster Torches and Burners*  
4030 HOLLIS STREET EMERYVILLE, CALIF.

# **RANSOME**

# **STOP!**

## **AND CONSIDER How Easy It Is To Build Up Your Load**

It's easy to build up your load with commercial ovens. They consume ten times as much gas as the ordinary kitchen range, and they are just as easy to sell. Every restaurant, camp, hotel and bakery, large or small, is a prospect. So why not concentrate on this lucrative market as a means to greater profits?



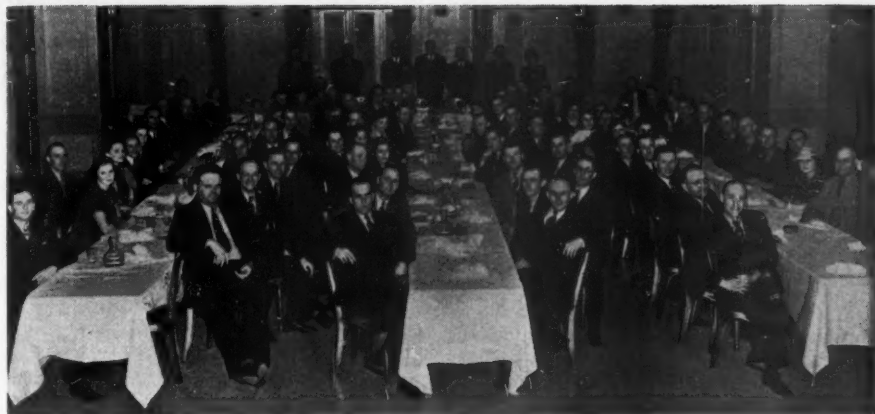
### ***Buy Ovens of Known Quality***

In the field of commercial ovens, there is none more efficient and serviceable than the well-known Blodgett Ovens. They have been standard since 1848 and even the smallest commercial kitchen can afford one. When ordering ovens, always specify the B.t.u. content of the gas, its specific gravity and pressure at the appliance.

**THE G. S. BLODGETT CO.**

Burlington, Vermont

# **BLODGETT OVENS**



Hydro-Gas dealers of Texas who met in 1939 annual convention at San Antonio early last spring. At rear of picture may be seen officials of Southern Steel, George D. Roper Corp., and Edwards Gas Appliance Co.

"fiddles" much over the process of making and decorating the cake, and very quickly he is surrounded by an exhibit full of people.

Another device brings its full reward in publicity value. The Edwards attendant more or less stumbled onto the fact that he could be of real help to the loud speaker department covering the fairs. So he arranges his exhibit early, then turns in to help the loud-speaker man set up his electrical loud-speaking apparatus. At some pause during the day's events when the announcer is waiting for the horses to get off to an even start in race number 5, he is apt, in appreciation, to blare forth a special announcement inviting the listening audience to be sure to visit the Hydro-Gas booth.

At each of the festivals Mr. Edwards has found it pays him to be on the "giving side." He furnishes free fuel for each restaurant on the ground. Usually the women's organization of some local church group operates the

eating places for profit. The free fuel naturally makes a big hit and results in fine contacts being made. Where desirable, the services of a demonstrator are also provided free.

There is another very definite advertising value which Mr. Edwards points to as his customary practice. This has to do with paid newspaper advertising. He always arranges to take paid space in the local papers during a fair. As a means of publicizing the fair, the newspapers usually write up the exhibitors who take advertising space. This results in free newspaper space, and is very resultful.

Fairs and festivals are but one feature of the Edwards sales program, for advantage is taken of every means possible to advance product and services. Operations are conducted in 33 districts and it takes Bryan White, vice president of the company, his full time to keep the dealers in coordination, maintain uniform price structures and train salesmen.

# NOTES

**M. I. Ekern**, of Flandreau, S. D., has recently taken the agency for Philgas in his community. He also expects to handle appliances for use with liquefied petroleum gas.

**D. W. Hollingsworth** is the distributor for Union butane gas in Hemet, Calif. He maintains a bulk plant from which customers in the surrounding valleys obtain the refills for their private installations.

**George L. Tyler**, secretary-treasurer of the California Natural Gasoline Assn., spent the last two weeks of July on a vacation to the Golden Gate International Exposition at San Francisco, the Yosemite Valley and other Northern California points of interest. He was accompanied by his family.

**The Ojibwa Inn**, Ojibwa, Wis., has installed Skelgas for cooking purposes.

**The Dallas Tank & Welding Co., Inc.** held open house on June 16 to celebrate the near-completion of its new plant and office building.

**Servel, Inc.**, are offering "summer souvenirs" as awards for selling accomplishments by Electrolux refrigerator salesmen. Among the many prizes from which selections can be made by company representatives whose sales total from 10 to 20 refrigerators during July and August are zipper leather bags, ladies' brooches, all-metal Sparkletts siphons, all-wool blankets, pipe sets, lamps, bathroom scales, electric clocks, carving sets, Gladstone bags, picnic kits, and bridge tables.

**North Carolina Butane Gas Co., Inc.**, has been formed in Raleigh, N. C. Headquarters of the company are located at 3020 Hillsboro St.

**L. A. Willis and Jerry Church** have filed notice with the county clerk of Hanford, Calif., that hereafter they will do business under the fictitious name of Willis Butane Service.

**J. D. Morner**, Pyrofax distributor for Ladysmith, Wis., conducted a cooking school in May to demonstrate the adaptability of Pyrofax gas to modern kitchen appliances. Miss Sally Sandison, formerly a member of the home economics faculty of the University of Minnesota, conducted the session.

**A Philgas** cooking school was recently featured at Seleen's store in Storden, Minn., during which demonstrations were made of the uses of liquefied petroleum gas in cooking, refrigeration, water and space heating.

**Jess LaPrade**, Willcox, Ariz., representative of the Home Gas and Fuel Co., has announced that prospective customers of Bu-Gas may now purchase appliances from his organization and finance both installations on the same contract.

**The Village Inn**, of Broadlands, Ill., has recently installed a new Skelgas range for use with liquefied petroleum gas.

**Joe Oberkamp**, Senora, Texas, butane gas dealer, spurred sales recently with a demonstration of cooking directed by Miss Zella Allen.

**The J. D. Carr Co.**, Pyrofax gas dealer for Anoka, Minn., gave May demonstrations under the direction of Olga V. Hanscomb, of St. Paul.

**The Alden Implement Co.** has secured the agency for Philgas in Alden, Minn., and is demonstrating the use of liquefied petroleum gas with new appliances that are on display in the new store.

**The Littlefield Appliance Co.**, Littlefield, Texas, has been successful lately in contracting for butane gas installations on many farms in nearby territory.

**Porter Carter**, of the Carter Hardware and Implement Co., Colville, Wash., has announced the selection of his company as authorized dealers for Stevens county for Standard Oil Co.'s liquefied petroleum gas "Flamo." In addition to supplying bottled gas, there will be carried a complete line of ranges, hot water heaters and refrigerators.

**Julius A. Schauls**, Pyrofax dealer for Durand, Wis., held a cooking school in late May to demonstrate liquefied petroleum gas and appliances. It was directed by Sally Sandison, food expert.

**The Iowa Public Service Co.** has recently obtained a permit to build a \$2000 locker room and lavatory for the employees of its new Waterloo, Iowa, liquefied gas plant.

**Sam Virga** has been granted a permit to install a butane service station at Fifth St. and First Ave. in Sacramento, Calif. It is within the limits of the heavy commercial zone which permits the establishment of similar stations, as provided for in a recently enacted ordinance by the city council.

**Home Appliance Co.** opened an office in Pecos, Texas, on June 5, with W. P. Foster as manager. Butane gas systems and appliances will be sold.

**Schramling & Irwin Hardware Co.** had a June display of a propane gas system and appliances at its Vici, Okla., headquarters.

**The James Hardware Store** has been made an official dealer for Shellane bottled gas in Richland Center, Wis. Appliances suitable for use with liquefied petroleum gas have been stocked and an intensive sales campaign will be started under the direction of Dan Young.

**Ray C. Burton** opened a complete butane distributing plant on the Salinas highway in Pajaro, Calif., on July 1. Mr. Burton had previously engaged in the trucking business in Watsonville, Calif., for 16 years. The new station will supply butane to trucks and domestic users.

**The Tulare County (Calif.) Farm Bureau** has under consideration the use of butane gas to power county pumps.

**Forslund's Skelgas Service** has opened for business in Hibbing, Minn., and will handle all Skelgas appliances adapted for use with liquefied petroleum gas.

**Ira R. Franklin** and son, Ralph, Skelgas dealers in Appleton City, Mo., recently moved into new quarters for better display of appliances. Before entering the liquefied petroleum gas field they were the owners of the *Appleton City Journal*.

**Marner and Adams**, dealers in appliances equipped for use with liquefied petroleum gas, held a June demonstration in their Lone Tree, Iowa, store. The same firm sells bottled gas, also.

## **Vinson Supply Co. Appointed By Fisher Governor Co.**

Fisher Governor Co. of Marshalltown, Iowa, has recently appointed the Vinson Supply Co., Tulsa, its exclusive agent for Fisher control specialties in the mid-continent area. According to P. A. Elfers, Fisher sales manager, the Vinson company's territory will include Oklahoma, Southern New Mexico, Western Arkansas, Dallas and Fort Worth area of Texas, West Texas and the Texas Panhandle. B. W. Vinson, president of the Vinson Supply Co., stated that a new district sales office has been opened in Dallas to serve the Texas territory. G. B. Lane, vice president of the Vinson Supply Company, will manage this Dallas office.

Charles D. Peterson, district manager for Fisher, will continue as a direct factory representative, with headquarters at the Vinson offices in Tulsa.

■ ■

## **Proposed Directory Will Aid Stove Service Departments**

The Institute of Cooking and Heating Appliance Manufacturers, Washington, D.C., is preparing a directory of all trade names now in use in stove and furnace industries, including trade names on stoves which are no longer manufactured as complete units but for which repair parts are still available.

It is expected that, when completed, the directory will include information concerning 500 manufacturing firms, and this list will be of use to service departments and will serve as a guide to manufacturers in selecting trade names so as to avoid duplication with those already in use.

■ ■

## **New Aviation Fuel Announced By Phillips Petroleum Co.**

News dispatches state that the Phillips Petroleum Co., Bartlesville, Okla., has announced the development and patent of a new fuel for aviation that, it is claimed, will greatly increase engine power. It is called "neohexane" and is produced from refinery and natural gases. Test flights have been made with it which lead to the belief that it will materially increase the performance efficiency of military and naval aircraft.

It is stated that the Phillips Petroleum Co. will offer it to the U. S. Government.



# Liquefied Petroleum Gas Lowers Fuel Costs By 25 Per Cent on Irrigation Pump Job

By W. N. McMILLEN,

Chief Engineer, Superior Manufacturing Co., Amarillo, Texas

**I**N ADVANCE of the irrigation season of 1939 the Superior Manufacturing Co., of Amarillo, Texas, conducted tests with liquefied petroleum



W. N. McMILLEN

gas as fuel for irrigation pumping units. The tests were a culmination of a strenuous campaign to introduce this new and revolutionary fuel to the irrigation farms of the Texas Panhandle and West Texas area.

The tests were widely advertised in advance and received a gratifying attendance of several hundred farmers of the area. The Cargray Corp., Amarillo, Texas, and the Ensign Carburetor Co., Ltd., Los Angeles, cooperated in conducting the demonstration.

Taking all performance data into consideration, it was found that an overall decrease in operation costs of about 25 per cent could be obtained by using butane-propane mixtures as fuel. The basis for the figures was upon equal prices per gallon of competitive fuels. This saving is increased due to present comparative price levels of gasoline versus butane or propane.

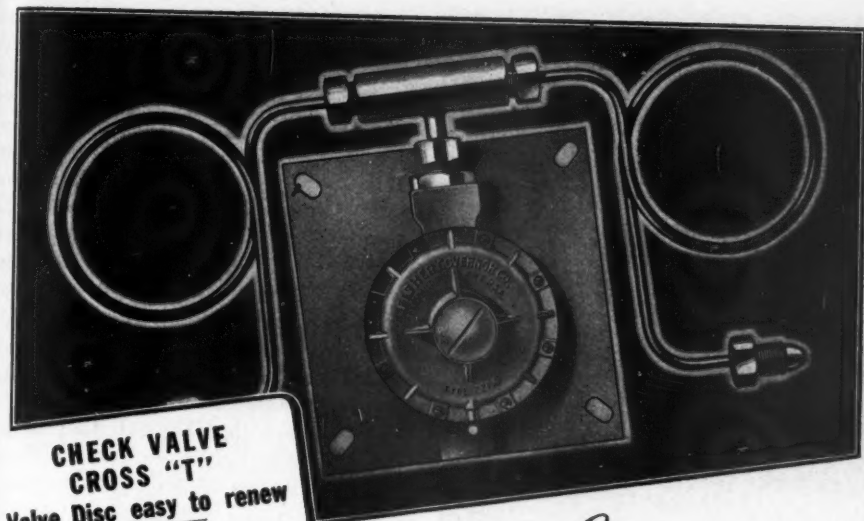
The power unit used was a Ford 35 hp. V-8 engine connected with a straight drive transmission to a geared pump head on an 8-in. Fairbanks centrifugal two stage pump. The engine and pump speed ratio was 1.2:1. The lift of water was 120 ft.

With gasoline of 70 octane rating the maximum pump speed developed was 1540 r.p.m. at full throttle. The fuel developed a tendency to "knock" at this speed, making approximately 1400 r.p.m. the maximum speed obtainable with smooth operation. Standard 5.5:1 compression ratio heads were used.

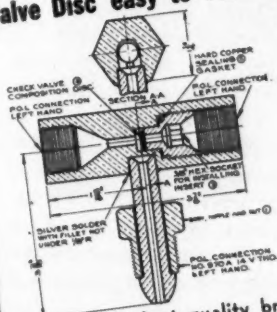
With 60-40 butane-propane fuel at the same compression ratio the maximum pump speed developed was 1620 r.p.m. with fuel consumption practically the same as gasoline (see table No. 1). The operation was smooth at all speeds with the engine responding quickly to accelerator manipulation.

With the compression ratio raised to 7.3:1 the maximum pump speed developed was 1730 r.p.m. on 60-40 butane-propane. Fuel consumption was less than that with gasoline at 5.5:1 ratio. The engine showed quick response and operated smoothly at all speeds.

Air temperature was 32°F. and no attempt was made to control engine temperature except by standard Ford



**CHECK VALVE  
CROSS "T"**  
Valve Disc easy to renew



Made of highest quality brass  
bar stock. Fitted with soft  
composition valve disc.

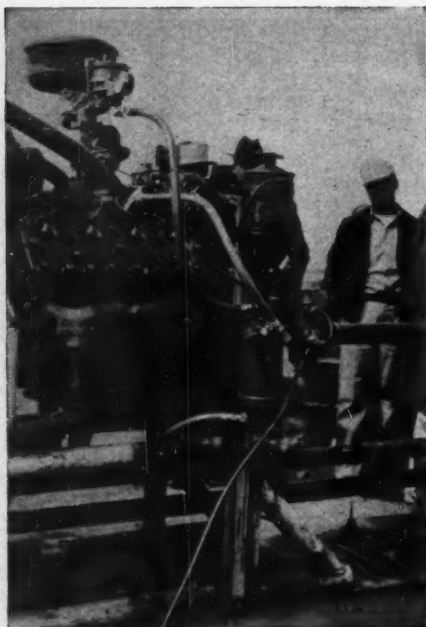
## *Low Cost* **FISHER** TWO DRUM BOTTLE GAS **REGULATOR** WITH DOUBLE ACTING CHECK VALVE CROSS "T"

This FISHER Type 721X assembly for two drum installations assures superior regulation at a low cost. Main regulator for this unit is the FISHER Type 721 which has a long, powerful valve leverage, plus large sensitive diaphragm area for extremely close pressure regulation. Type 721X assembly includes a double acting Check Valve Cross "T" and two copper tubing standard length pigtail connections. POL x POL pigtails regularly furnished. When empty cylinder is removed, Check Valve automatically closes off that side of Cross "T", preventing any excessive loss of gas. Valve disc is free to move from one seat to the other as pressure is applied or removed, to either connection. If cylinder is to be left disconnected, the free end of pigtail should be capped. Type 721X is capable of handling a capacity of gas sufficient to take care of all domestic and average commercial loads.

WRITE TODAY for information and latest prices on TYPE 721X and other FISHER Regulators for the Liquefied Petroleum Gas Industry.

**FISHER GOVERNOR COMPANY**  
903 FISHER BUILDING  
MARSHALLTOWN, IOWA

Complete Line of Other Bottled Gas Regulators,  
Connections, Fittings, etc. Also Special Design  
Regulators for Butane Service Industrial Plants.



Test engine, using liquefied petroleum gas carburetion on irrigation pump job.

thermostats in the water circulation system. It was found that spark advancement of about 5° produced best results with liquefied petroleum gas.

As an additional demonstration, propane vapors through a natural gas carburetion hook-up were taken from a 300-gal. propane tank. At the low atmospheric temperature the tank pressure was only 107 lbs. per sq. in. gage. At a pump speed of 1720 r.p.m. the supply tank pressure dropped to 75 lbs. per sq. in., where it remained for 30 minutes of operation. There was no "refrigeration" of the supply tank.

As a direct result of the successful demonstration of the economy of liquefied petroleum gas as engine fuel the Superior Manufacturing Co. sold 27 carburetors with 1000 gal. fuel tanks in the south Panhandle area. More installations have been made every week since.

The Superior Manufacturing Co. has built five 1400-gal. transport tanks for its customers who are handling fuel to points of consumption. It is interesting to note that four of the transport jobs are designed at 200 lbs. per sq. in. working pressure, A.S.M.E., for delivering pure propane to domestic above-ground propane systems during winter weather when irrigation activity is slow.

TABLE NO. 1. COMPARISON BETWEEN LIQUEFIED PETROLEUM GAS AND GASOLINE ON IRRIGATION TEST INSTALLATION

<i>Fuel</i>	<i>Comp. Ratio</i>	<i>Maximum Pump r.p.m.</i>	<i>Hourly Consumption Gals.</i>	<i>Pump r.p.m. Increase Over Gasoline at 5.5:1 Cr Per Cent</i>
Gasoline-70 .....	5.5:1	1540	3.93	.....
Propane .....	5.5:1	1610	4.92	4.5
Butane 60-40.....	5.5:1	1620	3.95	5.1
Propane .....	7.3:1	1720	4.08	11.6
Butane 60-40.....	7.3:1	1730	3.63	12.3

# SCAIFE

*Headquarters for*  
**LIQUEFIED PETROLEUM  
GAS CYLINDERS**



**QUALITY—SAFETY—DURABILITY!**

Keeping pace with the rapidly expanding butane-propane markets, the mounting sales of Scaife Cylinders reflect more strongly than ever the esteem in which the industry holds this premier product.

Built for the *service* you need and demand—of uniformly dimensioned, carefully selected material—by master craftsmen employing the most modern methods and equipment—conforming in every respect to I.C.C. regulations—each Scaife Cylinder supplies the reasons for making SCAIFE your one-word gas cylinder specification!

**WM. B.  
SCAIFE  
& SONS CO.**  
( F O U N D E D 1 8 0 2 )

General Offices,  
Laboratory and Works  
Oakmont, Pa.  
(Pittsburgh District)

Representatives  
in Principal Cities



BUTANE-PROPANE News

# Trial Demonstrations — One Way to Let The Housewife Sell Herself

A trial demonstration of butane will sell a prospect on the fuel, says A. L. Bettincourt, manager, Butex Gas Co., Inc., of Houston, Texas.

Accordingly, this company provides its six salesmen with trial demonstration equipment consisting of 3 to 5 gal. tanks of the fuel, together with hot plates, which can be immediately installed on the premises of the prospect. This plan is followed both in selling restaurants and private homes and has proved to be the most successful sales method used by the company.

This company also believes that there is no substitute for ringing door bells

as a means of locating prospects. New salesmen always start out making calls this way after first receiving training at the hands of an experienced salesman. The salesman expects to get some good prospects from among the friends of each satisfied customer.

In a highly competitive market the company has found that it pays to handle a nationally advertised range. More than once a system has been sold because the customer wanted a certain well known range.

W. E. Abernathy is president of Butex Gas Co., Inc. Emory S. Kelly is vice president, and Miss Eunice Best is secretary-treasurer.

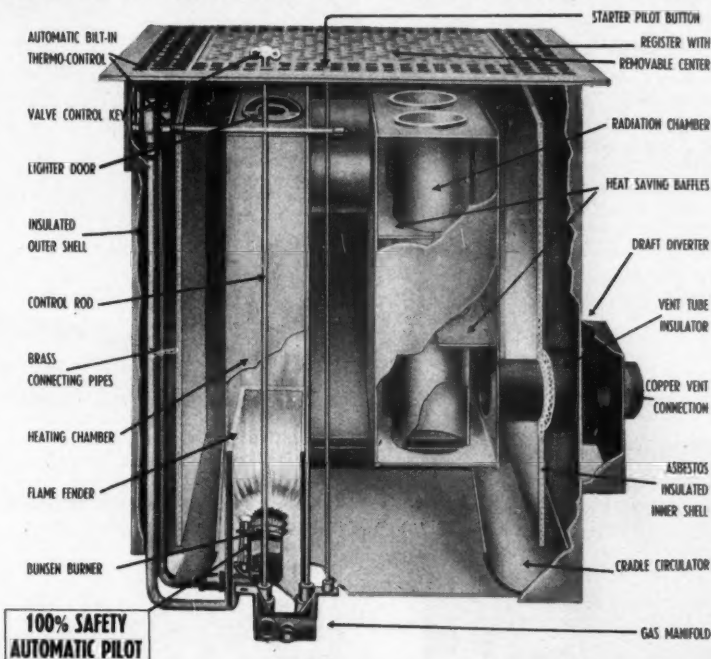


Above: R. O. Simpson, Frances Goff and A. L. Bettincourt, manager.  
Below: Headquarters of Butex Gas Co., Inc., Houston, Texas.



# SPACE HEATING PROFITS

FROM LIQUEFIED PETROLEUM GASES



## THE FLOOR FURNACE WITH THE 100% SAFETY PILOT

It will pay you to look into the Ward Automatic Floor Furnace. Its 100% SAFETY PILOT automatically shuts off gas flow to burner and pilot if flame goes out ...so that *not a bit of gas can escape*. This and many other fine features make the Ward a profitable house-heating appliance you should know more about.

*We'll be glad to send you our latest catalog!*

WARD HEATER COMPANY...LOS ANGELES, CALIFORNIA

# WARD AUTOMATIC FLOOR FURNACE



BUTANE-PROPANE News

# PRODUCTS

## Gas Log

*Strait & Richards, Inc., Newark, N. J.*

*Model: No. 25 Yule Log, A.G.A. approved for L.P.G. service.*

*Description:* Odorless, safe, decorative. Is easily installed. Burner and stand are one unit. Gas is connected at the center back and the logs are then placed on the stand, which is so designed that most andiron shanks will slide under them at each end. Specially designed high port burner is so flexible that a change in orifice is all that is necessary to adapt the Yule Log to liquefied petroleum gases. Width, 25 in.; height, 19 in.; depth, 13 in.; shipping weight, 95 lbs.; B.t.u. input per hr., 25,000.



## Tappan Range

*The Tappan Stove Co., Mansfield, Ohio.*

*Model: Tappan No. DV-29. Approved for L. P. G. service.*

*Description:* Embodying Tappan's divided top; stain-resisting porcelain finish, full-drop top covers, timer, protector-vent, with chromium vent nameplate; two dual-giant burners on left; two standard burners with two simmer-set valves on right; Flexo-speed oven with low temperature burner; oven insulated with hand-packed bundled wool; glass window in oven door; clean-



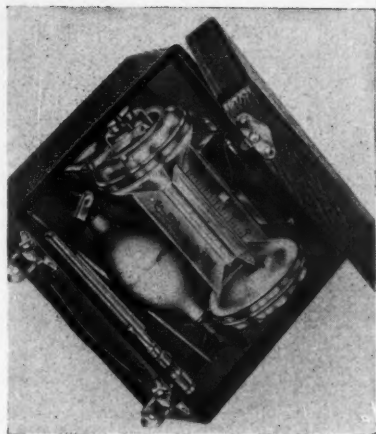
quick smokeless broiler, with ball-bearing drawer and spring mounted drop door; warming and storage compartments with ball-bearing drawers and trays; body made to fit flush to wall, with black ebonite toe cove base and white porcelain panels.

*Dimensions:* Stove—length, 42 in.; depth, 25½ in.; overall height, 49 in.; height to cooking top, 36 in. Oven—width, 18 in.; depth, 19 in.; height, 15 in. Shipping weight, 360 lbs.

## Hotstream CO<sub>2</sub> Analyzer

*The Hotstream Heater Co., Cleveland, Ohio.*

*Description:* A complete kit, consisting of a vest pocket draft gage, or small CO<sub>2</sub> analyzer and stack thermometer that can be used and operated by anyone working with oil, gas or coal-burning heating appliances. It is free of valves, clamps or leveling bottle. The CO<sub>2</sub> sample is pumped into gas chamber through an aspirator bulb, the sampling hose is detached, which seals the unit, and the gas is mixed with the absorption fluid by turning unit upside down. When returned to normal position, the suction created by the absorbed CO<sub>2</sub> pulls the



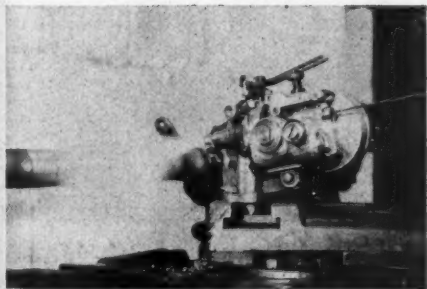
fluid into a graduated tube which indicates the percentage of volume absorbed. The result is to make it easy to obtain the proper combustion that will comply with the new F. H. A. housing regulations.

## Mogul Metallizing Gun

*Metallizing Co. of America, Inc., Los Angeles, Calif.*

*Model: "P"—Propane Mogul.*

*Description:* Features claimed—higher spraying speeds with use of propane, amounting in pounds per hour: steels, 8-10; aluminum, 7-9; bronzes, 15-20; zinc, 30-35. All metals sprayed with same top efficiency. Denser deposits and finer coatings, due to slowburning characteristic of gas which gives type of flame that makes possible



better atomization of the molten metal during spraying operation. Gas costs 50 per cent lower than other gas-oxygen costs, and gas consumption costs reduced as much as \$1 per hour. Efficiency increased, due to characteristic of propane making spray much more concentrated and therefore superior for coating any surface.

■ ■



## Wedgewood Range

*James Graham Mfg. Co., San Francisco.*

*Model: DeLuxe No. 4385-OT. Approved for L.P.G. service.*

*Description:* Equipped with a divided cooking top with ample working space in center, this Wedgewood model is available with a folding cover top which when raised does not cover the clock and condiment set. Another convenient feature is the waist-high smokeless Astogril aluminum rotoe disc broiler. It introduces smart new styling with flush-to-the-wall construction, recessed solid base, rust-proof porcelain finish and streamlined backguard and vent. The smooth porcelain finished sectional top has bowl-shaped reflectors, conserving heat and catching spillage.

## Georgia Butane Gas Installs Two Systems Every Three Days

Georgia Butane Gas Co., Sandersville, Ga., organized the first of April, had installed 50 butane systems up to the middle of June, according to Hermann Paris, president of the company. Branch offices have been opened at Macon with Jack Kesterson as manager, and at Washington with A. S. Mathis, Jr., as manager. Sidney Stapelton is general sales manager of the company.

An 18,500-gal. capacity bulk plant has been erected at Sandersville. The company operates two trucks, one of 3000-gal. capacity and the other of 1000-gal. capacity. All equipment is painted with chrome paint. (See photo below.)

## Health Department Approves N.B.F.U. Rules for Camps

At the last session of the legislature of New Mexico, legislation was passed which placed under the State Board of Health the inspection and control of liquefied petro-

leum gas installations at all state public camp grounds.

State Sanitarian Paul S. Fox, addressing the State Board of Health in annual session in Santa Fe on June 22, recommended that the National Board of Fire Underwriters' regulations be adopted in their entirety to control the installations and operation of butane and propane equipment in public campgrounds.

## C.N.G.A. Will Hold August Meeting in Long Beach

The California Natural Gasoline Association will hold its August meeting at the Pacific Coast Club in Long Beach on Thursday evening, August 3.

In September the organization will return to Los Angeles for its monthly meeting, but it will be held on the second Thursday, Sept. 14, instead of during the first week, as customarily. The Barker Bros. auditorium will be the regular place of meeting. These sessions are open to the public and are featured by addresses and discussions concerning the industry, and social activities.



Members of the staff of the Georgia Butane Gas Co., standing before the 18,500-gal. bulk plant and tank trucks in Sandersville, Ga.



Open house celebration in the new shop and office of the Dallas (Texas) Tank & Welding Co., Inc.

**Automatic Gas**  
**SYSTEM**

**THE BUTANE PLANT THAT IS MAKING HISTORY**  
**NOW REPRESENTED IN 21 STATES**

ONE DEALER SOLD AT  
RETAIL 2400 AUTOMATIC  
GAS SYSTEMS IN LESS  
THAN FOUR YEARS.



Approved by Underwriters' Laboratories. Exclusive dealer territory still available.

**AUTOMATIC GAS EQUIPMENT COMPANY**

*Manufacturers and Distributors*

2216-18 COMMERCE STREET

DALLAS, TEXAS



# RESEARCH

• **BUTANE-PROPANE** *News* wishes to keep its readers informed regarding technical and practical advances concerning research, manufacture, development, and transportation in the liquefied petroleum gas field. In this column will be found a resume of recently published articles, papers, bulletins and books dealing with the industry's various phases.

**Factors to Consider in Operating a Liquefied Petroleum Gas Service**—Otto H. Kohl. *GAS*, April, 1939, pp. 64-66. This discussion considers the problem not from the dealers' standpoint but from the standpoint of operators purchasing cylinders, building fill plants, owning and operating marketable bottle gas set-ups. It is emphasized that the difference between the cost of the gas and the cost to consumer is great but that the service cost offsets this profit considerably. Author points out that the general impression of the ease of running this business is fallacious and points out why this is so.

**Carbon Dioxide Fire Extinction**—Under the title "Modern Fire Fighting" (*Chemistry and Industry*, April 15, 1939, pp. 323-329) the author discusses the applications of various systems to modern industrial conditions. The carbon dioxide extinguisher is dealt with in some detail and reference is made to the rapid strides that have been made in the application of this process to all kinds of industrial and electrical risks.

**A New Inflammable Vapor Detector**—R. Barrington Brock. *Journal Society Chemical Industry*, April 1, 1939, pp. 286, 287. This apparatus, complete with all accessories, weighs only 16 mg. and the overall dimensions are 15½ in. long by 15 in. high by 5½ in. It will detect many types of inflammable vapors down to concentra-

tions of only 0.05 per cent. The readings vary slightly for different types of gases, but the method is substantially independent of the actual inflammable vapor involved. It will be observed that this low concentration which can be detected gives a very great margin of safety, the usual low limit for explosion being 1.5 per cent. It has a further great advantage over other types in that high concentrations of inflammable vapor can also be detected with the same instrument without alteration and without any damage to the instrument.

**Limits of Inflammability of Gases and Vapors** (Bureau of Mines Bulletin 279, revised)—H. F. Coward and G. W. Jones. A comprehensive survey covering the period from about 1800 to the present time has been made of the limits of inflammability of gasoline and benzol vapors, natural and manufactured gas, blast-furnace gas, hydrogen, acetylene and many other gases, a knowledge of which is of equal importance in the prevention of gas explosions and fires in the metallurgical, petroleum, gas-manufacturing, and related industries.

Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. (Price, 20 cents.)

**Kinetics of the Decomposition of Normal Butane**—Leonard S. Echols and Robert N. Pease. *Journal American Chemical Society*, January 1939, pp. 208-211. A re-investigation of the kinetics of decomposition of normal butane has shown that the reaction is very far from being the simple unimolecular reaction originally postulated on the basis of flow experiments at 1 atm. The variation of fractional reaction times with initial pressure indicates more nearly an order of 1.3. First of a series of papers on characteristics of normal butane decomposition.

**A Study of the Compressibility of Normal Butane**—*Journal American Chemical Society*, Vol. 61, 1939, pp. 24-26. The vapor pressure was measured at several temperatures. Several isotherms were also investigated in the critical region. Vapor pressures were investigated at 25° C. intervals from 75° to 150° C. The critical constants of normal butane are given.

**Chart for Equilibrium Calculations**—William S. Pope. *Chemistry and Metallurgy*, April, 1939, pp. 228, 229. In distillation and other unit operations involving vaporization and condensation, equilibrium calculations are frequently required. Usually the problem is solved by trial and error, a rather lengthy procedure. The author presents a chart and its explanation in this article which reduces the working time to a few minutes.

**Manufacture and Use of Butane**—H. E. Chambers. *Oil and Gas Journal*, April 27, 1939, pp. 67, 72. Butane has been considered a by-product of the refining and natural gasoline industries and ways and means of disposing of it profitably have been sought. Drilling rigs have become important consumers.

**Multicylinder Engine Detonation and Mixture Distribution**—A. J. Blackwood, C. B. Kass and O. G. Lewis. *S. A. E. Journal*, March, 1939, pp. 125-140. The extensive studies of ignition-system characteristics and gasoline-mixture distribution as affecting detonation reported in this paper bring out the following pertinent points: 1. Variations actually occurring in the spark advance from cylinder to cylinder may vary the octane-number requirement of individual cylinders by about 10 points; 2. With perfectly synchronized spark advance to all cylinders, the variation in mixture strength reaching the individual cylinders during full-throttle operation may still cause a variation of about 15 points in octane-number requirements of the individual cylinders. 3. With the particular test engine used, air-fuel mixture distribution could be improved markedly only by going to excessively high fuel volatility. 4. Care in assembling cars at the factory could bring about an average decrease in octane-number requirement of several points. This decrease, in turn, could be utilized in future designs to permit of higher compression ratio and increased efficiency.

**Determination of Sulfur in Light Refined Petroleum Oils**—W. A. Schulze, V. W. Wilson and A. E. Buell. *Oil and Gas Journal*, March 23, 1939, pp. 76, 78. This method is an advancement of the A.S.T.M.

Designation D90-34T. It presents modifications of the Ethyl Corporation method which permit the operator to secure consistently reproducible results accurate to a degree heretofore unattained. The principal modification consists in the substitution of a carbon dioxide-oxygen mixture for the stream of purified air ordinarily entering the chimney of the combustion unit. Other variations consist in a lamp of 30 ml. capacity for fuels of low sulfur content, and a double endpoint titration insuring exact neutralization. The net effect of these modifications is to insure the accuracy of the method over the entire concentration range encountered in work with petroleum oils.

**Safety in Natural Gasoline Plants Advanced Considerably in Past Six Years**—W. Shellshear. *California Oil World*, 2nd March issue, 1939, pp. 2, 3, 5, 6, 15. Discusses specific points conducive to safety, stressing particularly the safety relief valve. Diagram of suggested installation of three-way-three port valve for the vapor relief valves to facilitate repair of relief valves without shut down.

**Partial Volumetric Behavior of the Lighter Hydrocarbons in the Liquid Phase**—B. H. Sage, B. L. Hicks and W. M. Lacey. A. P. I. preprint, November, 1938, meeting. The prediction of the specific volume of homogeneous and heterogeneous complex hydrocarbon mixtures is of importance to the petroleum technologist. The partial specific volumes of each of the components in both the liquid and gas phases are of value in making such predictions.

**BUTANE TANKS  
HIGH PRESSURE VESSELS**

*for all purposes*

**LACY MFG. CO.**

Founded 1884 "Experience Counts"

Office 601 Washington Bldg.

Plant 1000 N. Main

LOS ANGELES, CALIF.

STRICTLY WHOLESALE



**ECONOMY BUTANE PLANT**

**Economy Butane Gas Systems,  
Butane Truck Tanks and  
Storage Tanks**

- Write, phone or wire for complete information, prices and exclusive dealership.

**"Tanks by Banks"**  
**DALLAS TANK & WELDING CO.**  
 Incorporated  
 201-5 W. COMMERCE ST. DALLAS, TEXAS



**Won't Leak,  
Stick or Bind**

CHIKSAN Ball-Bearing Swing Joints are Butane and Propane tight. Made in 17 different styles; for pressures to 3,000 lbs.

Style No. 60

Write for Catalog  
**CHIKSAN OIL TOOL CO., LTD.**  
 FULLERTON, CALIFORNIA



**Automatic  
Storage  
WATER  
HEATERS**

A. G. A. Approved for Propane  
 Write for Catalog "BP" and Sales Handbook

**Merit Water Heater Co.**  
 COMPTON, CALIFORNIA

## L. P. G. Installations Regulated In Many States By Safety Codes

Many states have codes governing the construction and installation of liquefied petroleum gas systems. BUTANE-PROPANE *News* in recent issues has reported on those of Minnesota, Oklahoma, Arkansas, Louisiana, Texas and California.

Tennessee has an act designated as Rules and Regulations No. 11 to regulate construction and installation of L. P. G. systems, and Rules and Regulations No. 12 to regulate L. P. G. as a motor fuel. Copies may be obtained from John W. Britton, state fire marshal, at Nashville, Tenn.

In Kentucky, standards of safety have been approved and adopted by the Division of Insurance Fire Prevention and Rate Section and are known as "Section XIX, Liquefied Petroleum Gases."

Michigan's regulations may be obtained from C. E. Gauss, of the Department of Insurance, Fire Marshal's Division, at Lansing, Mich.

Iowa has "Act HF No. 270" covering compressed gases, including liquefied petroleum gases, which allows only I. C. C. containers to be used in the State.

Distributors, dealers and operators in all states can obtain from their state governments copies of such regulations as have been adopted. Nearly all states have partial or complete codes covering activities of the L. P. G. industry.

## New Synthetic Rubber Uses No Raw Material Except Butane

Development of a process for making a synthetic rubber from butane was announced in Chicago early in July by Dr. Gustav Egloff, of the Universal Oil Products Co. laboratories, according to news reports. No raw material other than butane gas is required to produce it.

The process is said to have been advanced to the stage of commercial utilization, and the new rubber has been found to wear better than natural rubber, and to be cheaper than the "buna" rubber produced in Germany.

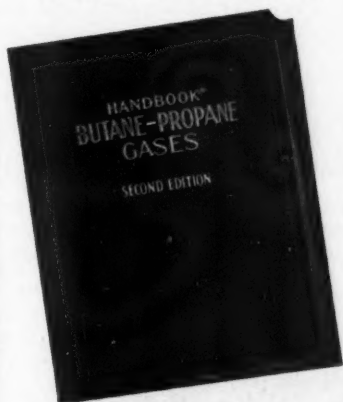
It is stated that there is at present a potential supply of butane that far exceeds all present or expected demands and existing processes of recovery can be adjusted to yield even more if desired.

# Handbook BUTANE-PROPANE GASES

(Revised November, 1938)

**SECOND EDITION**

**415 Pages**



**CONTENTS:** Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utili-

zation: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Transportation: Use with Other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalog Section.

*We pay the postage on orders accompanied by remittance.*

Published by  
**WESTERN BUSINESS  
PAPERS, INC.**  
Publishers of—

**BUTANE-PROPANE**  
*News*

**\$5<sup>00</sup>**  
Plus  
Postage

810 South Spring Street, Los Angeles, Calif.

**BUTANE-PROPANE News**

**PROPER EQUIPMENT**  
*Plus*  
**PROPER INSTALLATION**

*Equals*  
**SATISFIED  
 CUSTOMERS**

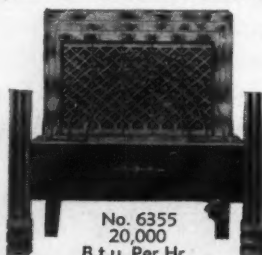
*Try the*



*Made by*  
**NATIONAL BUTANE  
 GAS CO.**  
 MEMPHIS TENN.

**P E E R L E S S  
 RADIANT HEATERS**

FOR USE WITH  
 LIQUEFIED PETROLEUM GASES



In Sizes and Designs to Suit Any Needs  
 Write for Catalog

**PEERLESS MFG. CORP.**  
 LOUISVILLE, KENTUCKY

**Texas Panhandle Dealers Meet  
 With Railroad Commission**

A meeting for all members of the liquefied petroleum gas industry of the Texas Panhandle and West Texas was held on June 29 at the Texas Technological College, Lubbock, Texas. The meeting was in charge of W. G. McIntosh, of the Gas Utilities Division of the Texas Railroad Commission. The Gas Utilities Division, of which Olin Culbertson is director, is the regulatory body for the liquefied petroleum gas industry of Texas.

The meeting, attended by about 50 dealers, was mostly in the nature of a discussion of the construction of pressure vessels and the adaptability of unfired pressure vessels constructed for butane to be used with a mixture of butane and iso-butane, or propane. Other subjects considered were the odorization of gases, controlling vapor pressures at the refineries, treating difficulties for removing hydrogen sulphide from originally "sour" natural gas, corrosion, installation procedures for domestic systems, state licenses for all dealers and handlers of liquefied petroleum gas, equipment for uses with such gas, and whether or not fuels should differ in summer and winter or a butane-propane mixture be adopted that would be suitable for all-year usage.

No formal resolutions were suggested, the purpose of the meeting being to further acquaint the Railroad Commission with the problems and practices of the industry.

**N.B.F.U. Makes Available 1939  
 Revision of L.P.G. Rules**

The National Board of Fire Underwriters has just issued the 1939 revision of its pamphlet No. 58, parts 1 and 2, covering rules and regulations for the liquefied petroleum gas industry. It is available free of cost to those writing to any of the district offices of the N. B. F. U.

**Trenton, Mo., Coal Gas Plant  
 Will Be Converted to Butane**

Work is under way to change over the Trenton, Mo., coal gas plant to one using butane, as has recently been done at Chillicothe and Clinton, Mo. The plants in all three towns are owned by the Missouri Public Service Co.





Automatic Gas System exhibit at Dallas (Texas) Ginners' Convention, held April 12-14. This company was the only system exhibitor at the Convention.

# ***ENSIGN***

**BUTANE-PROPANE  
CARBURETION EQUIPMENT**

**FOR**

**TRACTORS - TRUCKS - BUSES**

★ ★ ★ **STATIONARY ENGINES**

**DISTRIBUTORS FOR FORSTER  
TORCHES AND BURNERS FOR  
USE WITH BUTANE-PROPANE  
GAS AND NATURAL GAS . . .**

★ ★ ★ ★

# ***ENSIGN***

**CARBURETOR CO., LTD.**  
**LOS ANGELES - DALLAS - CHICAGO**

**BUTANE-PROPANE News**

# SPRAGUE METERS

for

PROPANE-BUTANE SERVICE

Write for Particulars

SPRAGUE METER  
COMPANY

Bridgeport, Conn.

SELL DAY AND NIGHT

## "America's Finest Water Heater"

1. 100% Safety Devices. 2. Economical Operation. 3. Foolproof Non-adjustable Burners  
—all insure complete customer satisfaction.

Day & Night Water Heater Co.  
MONROVIA, CALIFORNIA

## BUTANE FUEL TANKS

SKID TANKS      TRANSPORT TANKS  
STATIONARY STORAGE TRUCK TANKS  
UNDERGROUND SYSTEMS

A.S.M.E. U-69 Construction  
N.F.B.U. No. 58 Safety Regulations

McNamar Boiler & Tank Mfg. Co.  
TULSA, OKLA.      SALEM, ILL.

## C.N.G.A. Special Committee Will Continue Study of L. P. G.

The liquefied petroleum gas committee of the California Natural Gasoline Association will have the same personnel for the ensuing year as for 1938-39, according to President P. S. Magruder in an announcement at the July meeting of the board of directors. That committee, which has under preparation a bulletin recommending specifications of containers, test meters and other factors in the safe handling of L. P. gases, is composed of John S. Gallagher, The Texas Co., chairman, and the following members: Frank Burt, General Petroleum Corp.; A. L. Hendrickson, O. C. Field Gasoline Corp.; Fred Hough, Southern Counties Gas Co.; C. L. Hutchings, Tide Water Associated Oil Co.; G. N. Hile, Standard Oil Co.; A. N. Kerr, Imperial Gas Co.; C. E. McCartney, Petrolane, Ltd.; F. O. Olmstead, Union Oil Co.; C. L. Parkhill, Parkhill-Wade; Turner Smith, General Petroleum Corp.; E. J. Squire, Shell Oil Co., Inc.; and A. J. Bush, Tide Water Associated Oil Co.

## George Reid Becomes Secretary of Gulf Coast Refiners Assn.

George Reid, editor of the *Refiner & Natural Gasoline Manufacturer* since 1934, and on the staff of the Gulf Publishing Co. since 1926, has resigned to become executive secretary to the newly formed Gulf Coast Refiners Association, organized to secure and publish statistical information for the use of its 10 member companies and the public.

Prior to Mr. Reid's editorial work he held positions of refinery superintendent and chief chemist with several mid-continent refineries. His new headquarters will be in Houston, Texas.

## J. D. Turner, George W. Warren Form Eastern Butane Gas Co.

Eastern Butane Gas Co., Inc., has been formed by J. D. Turner and George W. Warren at New Bern, N. C. The company will sell butane systems and appliances throughout eastern North Carolina and in a radius of 50 miles of New Bern. An 18,500-gal. bulk storage plant is to be erected on the Atlantic and North Carolina railroad at Oaks siding in the city.

# GREATER VOLUME at lower speed...

## with GRANCO BUTANE PUMP

Exclusive Granberg principle... Rotary knuckle joint pivoted in housing without dragging or sliding movement. No scoops, blades, drags, gears, wheels, washers, springs nor rings.



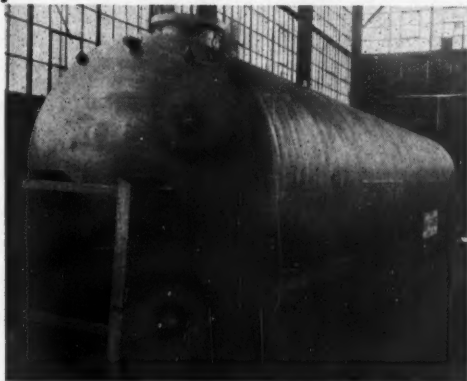
Dealers and Stock  
in Principal Cities

Greater gallonage per revolution than any other pump of equal size. Lower operating speed, consequently less wear and longer life... less turbulence, causing less foaming. Granco rotor doesn't heat when pump is starved or running dry. Write for catalog sheet and complete information and name of dealer nearest you.

FOR EXTRA GOOD PUMPING EQUIPMENT  
**Granco**  
GRANBERG EQUIPMENT, INC.  
4068 HOLDEN STREET  
OAKLAND, CALIFORNIA

## QUALITY BUTANE-PROPANE TANKS DESIGNED FOR RIGID REQUIREMENTS

*Underground and Above-Ground Service*



18,000 Gallon Water — 15,000 Gallon Liquid Propane  
Capacity Storage Tank 8' 2 1/4" diameter and 50' 5 1/4"  
long; 200 lbs. per square inch working pressure.

Qualified to manufacture pressure vessels in accordance with the ASME code; API-ASME Committee, Department of Public Safety, Commonwealth of Massachusetts; and National Board of Boiler and Pressure Vessel Inspectors.

Avail yourself of Lancaster's complete engineering and estimating service — with no obligation, of course.

**LANCASTER IRON  
WORKS, INC.**

LANCASTER

PENNA.

# HUMPHREY

*Quality Appliances for*  
**BUTANE · PROPANE**

## NO. 1 OPALITE

Lighting with gas becomes modern and popular with these new Humphrey Opalites. There's all the com-

forting brilliance of daylight without glare.



## JUNIOR OPALITE

Especially designed for lighting smaller areas. Send for complete information on all Humphrey Butane and Propane Gas appliances.



**GENERAL GAS LIGHT CO.**  
KALAMAZOO, MICHIGAN

## ETHYL MERCAPTAN

*Purified*

**The ACCEPTED  
gas odorant.**

**MALLINCKRODT  
CHEMICAL WORKS**

St. Louis

New York

## STABILIZERS HEAT EXCHANGERS BUTANE TANKS

**Quality Products Only**  
**Southwestern Engineering Co.**  
4800 Santa Fe Ave., Los Angeles, Calif.

## Propane Town Plants Installed in Three New Mexico Cities

The Superior Marketing Co., Albuquerque, N. M., has completed installation of undiluted propane distribution systems at Melrose and Magdalena, New Mexico, and at this time is installing at Hot Springs a similar system.

At Melrose the installation was a contract job, built for a city-owned utility system, while at Magdalena the system was installed to complete requirements for a 25-year franchise granted outright to the Superior Marketing Co.

The systems are installed in accordance with existing National Board of Fire Underwriters' regulations and are comprised of above-ground propane storage, the gas passing from the tanks as a vapor, then through dual stage regulators, from whence it is piped by mains to points of consumption within the city limits.

Designs for the systems were planned by the engineering department of the Superior Manufacturing Co., Amarillo, Texas, headed by W. N. McMillen. Installation of the systems is under supervision of J. H. Pundt, field engineer.

## Reductions Made in Rates of New Stargas Service

As a result of an additional volume of sales during the past year, the Stargas Department of the Lone Star Gas Co., Dallas, Texas, announced rate reductions in Stargas service, beginning June 1, according to J. Woodward Martin, manager. The new schedule is as follows:

*Gals. Used Per Mo.      Cost Per Gal. Net*

First 20 .....	\$ .20
Next 30 .....	.10
Next 25 .....	.08
Over 75 .....	.07

Two cents per gallon will be added to above rates if bills are not paid within 10 days from billing date.

The minimum bill, entitling consumer to 7½ gallons per month, is \$1.50, as against \$2.75 for two gallons, former minimum.

The cost of all gas used in excess of 75 gallons is now 12½ per cent less than charged before the recent reduction.

## Alamogordo, N. M., Grants 25-Year Franchise for Propane Gas

Uel M. Lane was granted a 25-year franchise on June 11 to furnish propane gas to Alamogordo, N. M., residents for heating, cooking and light.

The ordinance calls for the laying of 2-in. mains 18 in. underground, and  $\frac{3}{4}$ -in. feeder mains to consumers. Construction work on mains and plant must be under way by September 11.

The rates to be charged for gas, as provided by the franchise, shall not exceed the maximum of \$1.50 for 1500 cu. ft., and the minimum monthly charge is set at \$1.50 per meter per month. The balance of the stipulated rate schedule follows:

First 2000 cu. ft., \$1 per 1000 cu. ft.; next 2000 cu. ft. 90 cents per 1000 cu. ft.; next 5000 cu. ft. 80 cents per 1000 cu. ft.; next 10,000 cu. ft. 70 cents per 1000 cu. ft. All over 20,000 cu. ft. 65 cents per 1000 cu. ft.

## Butane Gas Corp., Omaha, Neb., Makes Auspicious Beginning

The Butane Gas Corp. is the name of a new organization in Omaha, Neb., that was recently incorporated with a capitalization of \$20,000. The president of the company is Carl A. Anderson. S. H. Greisch is vice president and general manager, J. O. Storrs is secretary and Carl A. Nelson is treasurer. Others interested in the company are Paul Schreiner and A. E. Wickstrom.

Although operating but a short time, the Butane Gas Corp. is delivering 30,000 gals. of butane per month to rural customers. A 2500-gal. transport truck, several installation trucks and 10 salesmen are serving present consumers and building for larger operations.

## L. A. Sadler Passes Away At Abilene, Texas, Home

L. A. Sadler, assistant deputy supervisor of the oil and gas division of the Texas Railroad Commission, died of a heart attack at his Abilene, Texas, home on June 17. He was 57 years of age.

Mr. Sadler had formerly been a banker, a city commissioner and tax assessor-collector in Jones county. He was born in Pleasant Plains, Ark., and came to Abilene 18 years ago from Stamford, Texas.

## ADVERTISERS

American Meter Co.....	6
Automatic Gas Equipment Co.....	61
The Bastian-Blessing Co.....	36, 37
The G. S. Blodgett Co.....	48
Ralph M. Brodie Co.....	Third Cover
Carter Oil Co.....	72
Chiksan Oil Tool Co., Ltd.....	64
Dallas Tank & Welding Co.....	64
Day & Night Water Heater Co.....	68
Ensign Carburetor Co., Ltd.....	67
Fisher Governor Co.....	53
General Gas Light Co.....	70
Granberg Equipment, Inc.....	69
Handbook Butane-Propane Gases..	65
Kerotest Manufacturing Co.....	72
Lacy Manufacturing Co.....	63
Lancaster Iron Works.....	69
Mallinckrodt Chemical Works.....	70
McNamar Boiler and Tank Mfg. Co. ....	29
Merit Water Heater Co.....	64
National Butane Gas Co.....	66
Ohio Foundry & Manufacturing Co. ....	29
Pacific Gas Radiator Co.....	31
Parkhill-Wade .....	3
Peerless Manufacturing Corp.....	66
Philgas Dept., Phillips Petroleum Co. ....	35
Pressed Steel Tank Co...Second Cover	
Ransome Co. ....	47
Reliance Regulator Corp.....	—
Robertshaw Thermostat Co.....	43
Geo. D. Roper Corp.....	33
Wm. B. Scaife & Sons Co.....	55
Servel, Inc. ....	Fourth Cover
Shell Oil Co., Inc.....	1
Southwestern Engineering Co.....	70
Sprague Meter Co.....	68
Standard Oil Co. of Calif.....	45
Tappan Stove Co.....	38
Ward Heater Co.....	57
Harold W. Wickstrom.....	—



The  
**CARTER  
OIL COMPANY**

Tulsa, Oklahoma

**Manufacturers  
and  
Suppliers**

of dehydrated  
**PROPANE and BUTANE**

for the distributing and industrial  
trade. Shipping point: Seminole,  
Oklahoma.

Address inquiries to:  
**Marketing Department  
Room 930, National Bank  
of Tulsa Building  
Tulsa, Oklahoma**



**EVERY MANUFACTURER AND  
DISTRIBUTOR OF**

**BUTANE-PROPANE GAS**  
SHOULD HAVE A COPY OF THIS INFORMATIVE  
**KEROTEST BROCHURE**  
**KEROTEST MANUFACTURING CO.**  
PITTSBURGH, PA.

**L. P. G. Recommendations Offered  
To Oklahoma Commission**

A committee of manufacturers and dealers in liquefied petroleum gas and equipment, of which A. L. Tucker, manager, The Southwest Factory, Oklahoma City, is chairman, is working out a set of tentative rules and regulations covering safe storage and handling of such gases.

A meeting of the committee was scheduled for July 28 to discuss the proposed rules, which when worked out will be offered as suggestions to the Oklahoma Corporation Commission, which was given jurisdiction over safety regulations applying to the liquefied petroleum gas industry in a new law passed by the Oklahoma legislature, April 25, 1939. The new law became effective late in July but cannot be enforced until the regulations are worked out and adopted by the Oklahoma Corporation Commission.

**Sheffy Implement Co. is Named  
Baker-Fleming Co. Agent**

The Sheffy Implement Co. has been appointed selling agent in Demmitt, Texas, for the Baker-Fleming Farm Gas Co., of Lockney and Lubbock, Texas. Robin Baker completed the deal on July 6 which will give the Demmitt firm the exclusive privilege of handling the new "Flash-O-Gas" systems developed by the Baker-Fleming organization.

**Oklahoma Automatic Appoints  
Kenneth Fulton Branch Manager**

The Oklahoma Automatic Gas Co., of Oklahoma City, opened a branch office in Shattuck, Okla., the middle of June, naming Kenneth Fulton, a local man, manager. The firm manufactures and distributes complete automatic butane gas systems and acts as sales agent for many L. P. gas appliances.

**Mid-West Section of L.P.G.A. Will  
Hold Fall Meeting Sept. 25, 26**

The Mid-West Section of the Liquefied Petroleum Gas Association will hold its Fall meeting in Des Moines, Iowa, on Sept. 25 and 26, according to word received from Kenneth R. D. Wolfe, chairman.

# YOU'LL WANT REGISTERED RECORDS

IN HANDLING LIQUEFIED PETROLEUM GAS..

Brodie Meters equipped with Brodimatic Printers assure positive control of all stock records. Furnishing a meter printed and registered receipt the Brodimatic Printer allows daily checking to locate and correct errors or losses. Brodie Meters and Equipment are particularly designed and adapted for handling and measuring Liquefied Petroleum Gas.

WRITE TODAY, FOR COMPLETE  
INFORMATION

..... AND  
THAT'S WHAT  
YOU'LL HAVE

WITH  
BRODIMATIC  
PRINTING



# BRODIE METERS

**RALPH N. BRODIE CO., INC.** 945 61st St., OAKLAND, California, U.S.A. • Cable Address: "BRODICO" • Division Offices: Chrysler Bldg., NEW YORK CITY • 59 E. Van Buren, CHICAGO  
*Representatives and Stocks in All Principal Cities*

# THERE'S BETTER BUSINESS AHEAD FOR DEALERS WHO SELL

## *Gas Refrigeration*

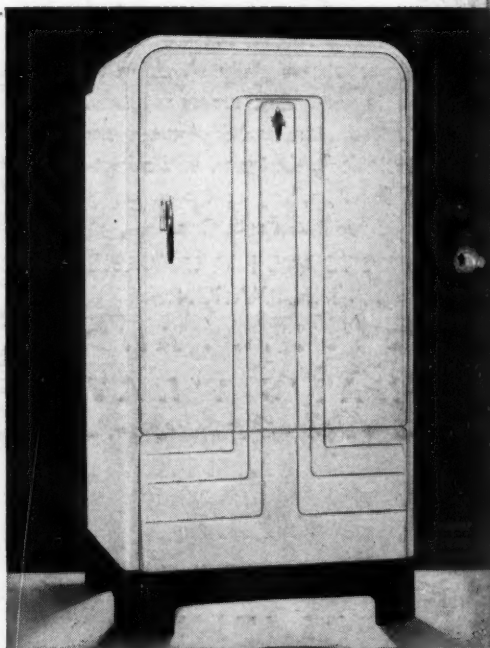
**Servel Electrolux Operates on Tank or Bottled Gas**

**Helps dealers win new customers,  
increased loads**

**Y**OU will find that there are plus-profits for your business in selling Servel . . . for not only can you build a steady income with this refrigerator for suburban and rural markets, but you'll find it gets folks interested in the use of other gas appliances.

Servel Electrolux refrigeration—in more than a million homes—has won an enviable reputation with its silent freezing with *no moving parts*, continued low operating cost, its added years of dependable service and savings that pay for it.

Keep pace with the rapidly growing liquefied petroleum gas industry thru gas refrigeration. Servel's national magazine and radio advertising and powerful dealer backing will help you sell. Servel, Inc., Servel Electrolux Sales Div., Evansville, Indiana.



### **GAS REFRIGERATION—**

- Publicizes the Modernity of Gas
- Protects Your Present Gas Load
- Stimulates the Sales of Other Gas Appliances
- Builds Load without Extra Investment



**FREEZES SILENTLY...WITH NO MOVING PARTS**

